

FINANCING POST-SECONDARY EDUCATION

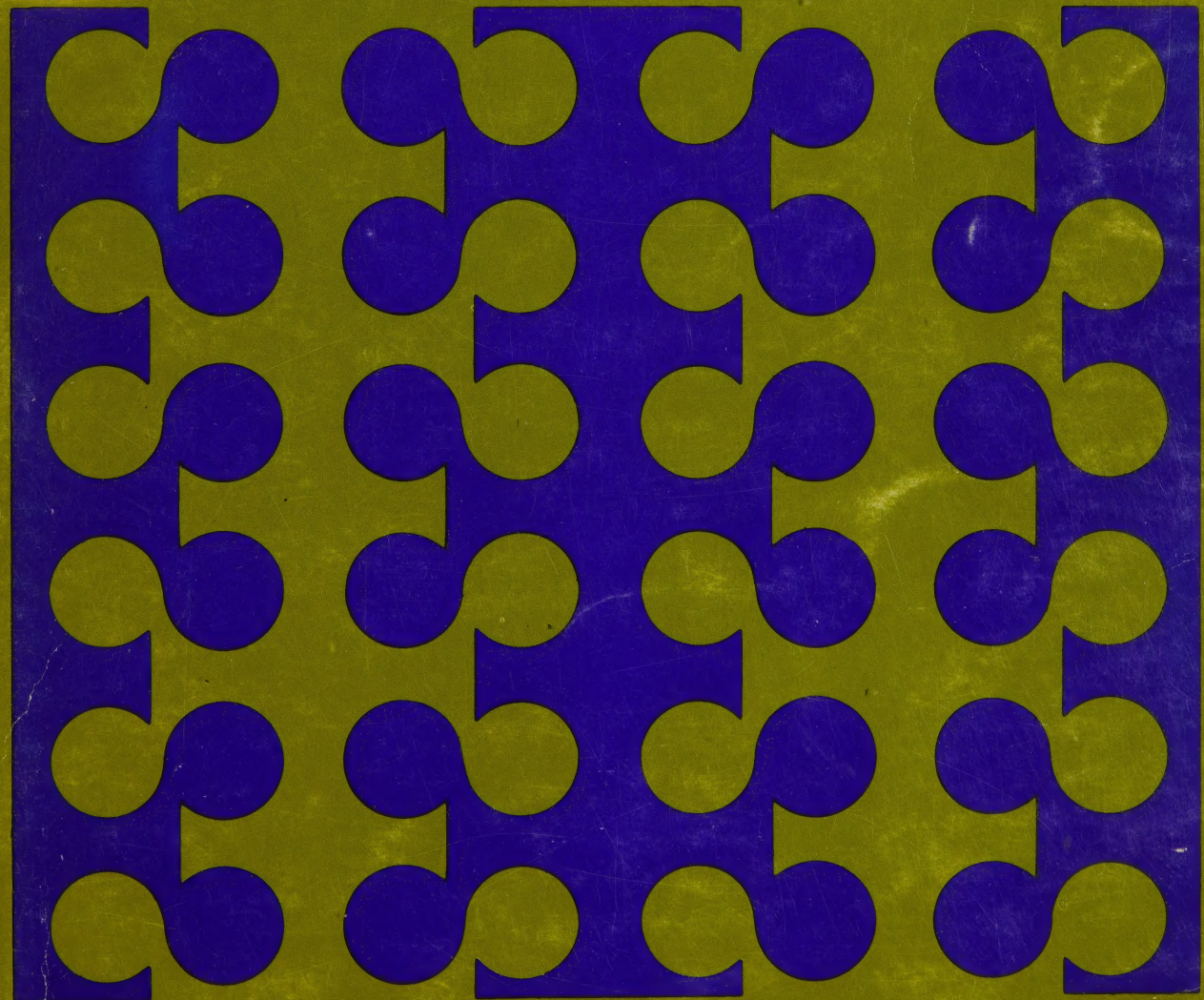
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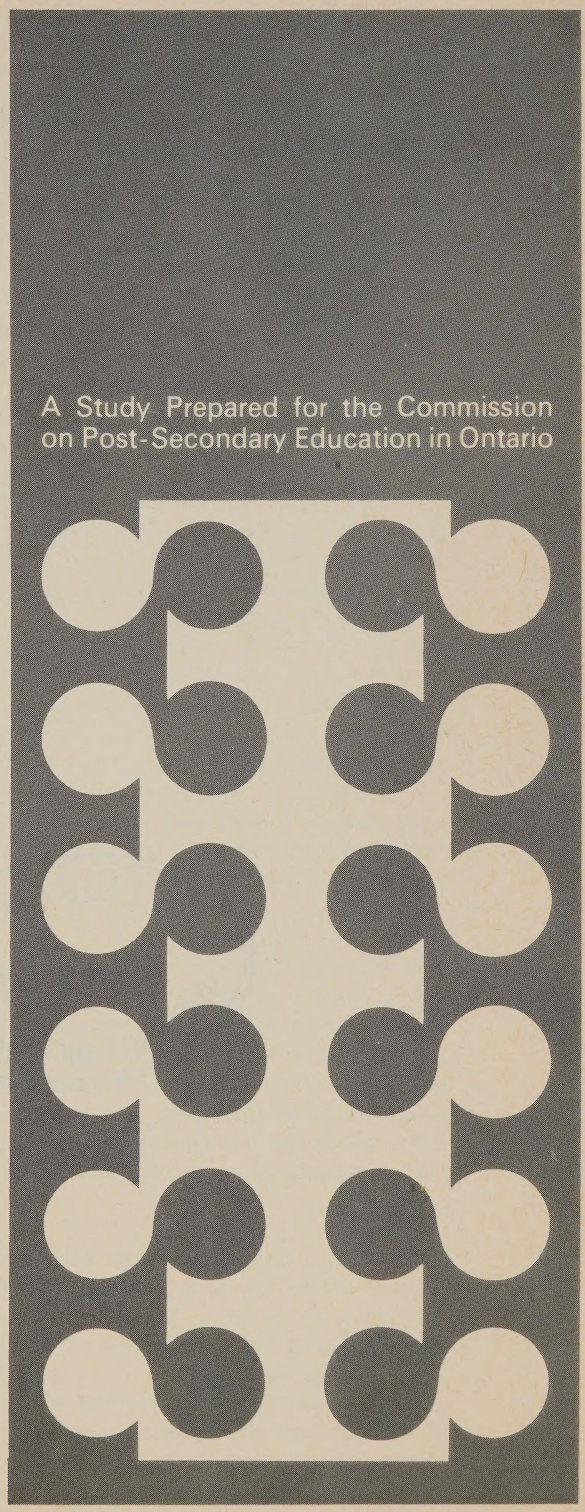
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FINANCING POST-SECONDARY EDUCATION

A Study Prepared for the Commission
on Post-Secondary Education in Ontario



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of the
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Financing Post-Secondary Education

Editorial Foreword

The Commission on Post-Secondary Education in Ontario was required by its terms of reference "to consider, in the light of present provisions for university and other post-secondary education in Ontario, the pattern necessary to ensure the further effective development of post-secondary education in the province during the period to 1980, and in general terms to 1990. . . ." Among other particular matters, the Commission was instructed to study and to make recommendations on "the costs, allocation of resources and methods of financing for post-secondary education in Ontario as related to the attainment of equality of educational opportunity and as related to the resources of the Province."

Perhaps no other aspect of post-secondary education has attracted more attention in recent years than this financial one. The growth and proliferation of post-secondary educational institutions since World War II, the growth of the government's role in financing the cost of these institutions, the discussion of the contribution of education to the country's economic growth, and the question of the appropriate distribution of the costs of post-secondary education within society all have either direct or indirect associations with any discussion of its financing.

The Commission's preliminary consideration of this topic yielded an appreciation of the complexity of the financing issues, but also led it to the view, expressed in its statement of issues (*Post-Secondary Education in Ontario: A Statement of Issues*, page 13), that "in spite of all claims to the contrary, we believe that the basic issues facing post-secondary education in Ontario are not financial, though they certainly have financial implications." With respect to these financial implications, the Commission subsequently focussed its attention upon two main questions: how should the burden of the financing of post-secondary education be shared between the government and the individual, and how should the distribution of the burden be administered?

A large amount of published material was available to the Commission on this topic, some of which was referred to in the *Statement of Issues*. Time and cost considerations did not appear to warrant launching another primary research project in this area, but at the same time it was apparent that the discussion of the topic within the particular Ontario context would be greatly facilitated if the pertinent material could be assembled and organized for easier reference. It was also evident that it would be useful to examine in a practical way the implications of the more plausible alternative financing schemes that had been proposed in this literature.

To these ends the Commission invited qualified parties to submit tenders on a background study which had as its principal objectives a review of the present system of financing post-secondary education in Ontario, a survey of alternative financial schemes, and an estimation of the implications of all these methods through the use of carefully constructed numerical modelling techniques. The contract for such a study was awarded on a competitive tendering basis to Systems Research Group of Toronto, a firm that has specialized in the development of

scientific techniques for use in planning and management within the public sector. This organization has been heavily involved in the development and application of computer-based simulation models and information systems for educational and health institutions both in Canada and the United States. The execution of the study, now published here, was much facilitated by the earlier work done by Systems Research Group for the Commission and published as the *Cost and Benefit Study* in this series. The latter investigation yielded a "base case", in the form of the school year 1968-69, which was used as a reference point against which to model the implications of the alternative financial schemes described in the present study. The reader is strongly advised to consult the *Cost and Benefit Study* when considering the analysis set out here and particularly when reading Chapter II.

The reader's attention is also drawn to the fact that the authors of the present study had to build in a number of important assumptions, especially assumptions about the demand response of students to changes in tuition levels, loan and grant terms, repayment arrangements and other parameters which could only be quantified on the basis of the researchers' judgement or intuition. This was necessitated by the shortcomings of the empirical data currently available on such subjects. The researchers have attempted to make these assumptions explicit, but it is important to be aware of the extent to which relatively modest changes in some of these values would affect the outcome of the analysis and the inferences to be drawn therefrom.

The conclusions reached by the authors of this study and their summary of its results are set out in Chapter VII. These findings, along with the demonstration of the feasibility of the type of analysis that underlies them, will contribute to the public's understanding and discussion of the recommendations which the Commission has made in its *Draft Report* on the subject of financing. However, the opinions and conclusions contained in this study are solely those of the authors, and the publication of the study does not necessarily mean that all or any of these opinions and conclusions are endorsed by the Commission.

FINANCING POST-SECONDARY EDUCATION

The research reported here was funded by the Commission on Post-Secondary Education of Ontario, as part of its research program. The work was produced by the Systems Research Group under the direction of Professor R. W. Judy.

SEPTEMBER, 1971.

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We would like to take this opportunity to thank the many people who aided this project by supplying data and offering advice on content or style.

Members of SRG who contributed to this study were Mike Kunta, Andy Lester, Ted Zaharchuk for his many suggestions and patient reading of the material, Robert Royiwsky, Project Leader and R.W. Judy, Principal.

Special thanks also go to David Stager for his overall contribution of material and suggestions, and Michael Skolnik of O.I.S.E. for his helpful discussion on demand for education, both of which added greater perspective to the study.

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CHAPTER I

A. Introduction

The financing of post-secondary education has become a key issue not only in Ontario but generally throughout North America. The rapid expansion of post-secondary education in Ontario has resulted in an escalation of costs required to provide these services. The educational sector faces a contradictory set of pressures as expenditures come under sharper criticism from taxpayers, yet the demand for education is rapidly increasing and the opportunity to attend a post-secondary institution is being viewed as a "right" rather than as a privilege.

Social consciousness has been aroused to the point where financial barriers are being viewed as unacceptable hurdles to entrance into post-secondary education and, in fact, the validity of any restriction is being questioned. Traditionally, post-secondary education has been viewed as an "investment" decision from which the graduate received benefits in the form of better jobs, increased earnings, or an improved life style, while society benefitted through increased tax yields, a more educated and more rational society, and increased numbers of graduates. The investment viewpoint on post-secondary education is being questioned and the argument that education is a "consumption commodity," consumed by participants without reference to investment returns, is being raised.

The two alternative approaches to defining the economic nature of education have fundamentally different impacts on the nature of financing post-secondary education. (If education is a purely consumption commodity, then there would seem to be little economic rationale for public subsidy; if education is an investment good, it bestows economic value on participants, affects the size and distribution of income and wealth in society, and should, therefore, receive some form of public subsidy.) As might be expected, education is neither pure investment nor pure consumption, and its hybrid nature adds some conceptual confusion to the economic question of efficient resource allocation through public finance.

Ontario has evolved a system of financing post-secondary education over several decades. In some respects this system is working well, but in others it leaves much to be desired. In the past few years many people have addressed the question of designing improved methods for financing post-secondary education. The result is a number of alternative schemes that are either in operation, or are only in the proposal stage. The purpose of this study will be to investigate the alternatives and recommend means of improving the method of financing post-secondary education in Ontario.

B. A History of Financial Aid to Students in Ontario^{1,2}

Although at present the general public views post-secondary education as desirable, there does not appear to be consensus on the methods of financing this support. Today, federal, provincial and private sources provide support in a variety of forms, such as loans, grants and scholarships. General public support was not always forthcoming in education and the system of support which exists today is a patchwork quilt, whose historical evolution must be traced before it can be completely understood.

Prior to 1930, very little public aid was available to students. Aid consisted of essentially private scholarships and parental support. The first formal public aid was established in 1920, when the Ontario legislature passed an Act authorizing payment of a total of \$6,000 in scholarships to Ontario resident high school teachers to pursue their studies in France.

In 1927, the Department of Education inaugurated assistance for French-speaking students who were enrolled at Ontario's only French language school affiliated with

¹G.C.A. Cook and D.A.A. Stager, Student Financial Assistance Programs with Special Reference to the Province of Ontario, Institute for the Quantitative Analysis of Social and Economic Policy (Toronto, U. of T. Press, 1969).

²Charles Hanly, Who Pays? University Financing in Ontario (Toronto, James Lewis and Samuel, 1970).

the University of Ottawa. Students who could not commute daily were given a travel subsidy and offered loans to cover living costs. These loans were forgiven on the basis of teaching service. One-quarter of the loan became a gift for each year of teaching service so that a student who taught for four years would not have to repay any portion of his loan. As the majority of students taking out loans went into the teaching profession, most loans were never repaid.

A Dominion-Provincial Youth Training Program supported equally by the federal and provincial governments was established in 1937 to provide new vocational training facilities for those young people who had been deprived by the Depression of an opportunity to learn a trade. In 1939, the federal government put forward a proposal that financial assistance be made available to university students and this proposal was adopted first by the four western provinces and Prince Edward Island. All of the other provinces joined by 1944. This scheme was known as the Dominion-Provincial Student Aid Program. It remained the only national program of direct financial aid to undergraduates until succeeded by the Canada Student Loans Plan in 1964.

Recipients had to be between 16 and 30 years of age, with parents unable to pay for the full cost of their training. The federal government was authorized to spend

\$1.5 million per year for three years in a matching grant program with the provinces. In 1939-40, a revised aid program was introduced which limited student aid to a maximum of \$200. By 1942, all provinces except Ontario participated in the program and awards were made on the basis of a 50-50 federal-provincial split. Awards were through loans or grants or combinations thereof depending on the province.

A special \$400,000 Dominion Student Aid Fund was established in 1942 to assist students who were ineligible for Dominion-Provincial Aid. Limits on funds to any student could not exceed \$400 for Medicine and Dentistry, \$300 for Engineering or Science, and \$200 for the general programs.

In 1941, the Department of Pensions and National Health inaugurated a program to assist returning veterans to continue their education. The number of veterans receiving training allowances rose to over 28,000 between 1945 and 1947, and the acknowledged success of the Department of Veteran Affairs (DVA) program added support for the drive for equalization of educational opportunity.

In Ontario, scholarships of \$400 for non-residents and \$200 for residents were proposed by Dr. John Long of the Department of Educational Research, Ontario College of Education, to Mr. Duncan McArthur, Deputy Minister of Education who indicated such a plan was being formulated.

Awards were based on declarations of students and parents and a confidential evaluation by students' teachers or principals.

These scholarships were implemented under the same Provincial Student Aid Scholarship Plan in 1943-44 with a budget of \$60,000. The scholarships were in three classes:

- a.) first year university
(residents, \$200 and non-residents, \$400)
- b.) normal school
(residents, \$125 and non-residents, \$200)
- c.) grade 13
(residents, \$100 and non-residents, \$100)

In 1944, Ontario and the federal government agreed on a co-operative program. The Ontario admission scholarships of 1943 were retained and were known as Type A bursaries. Type B bursaries were introduced in 1944 and were available to all Ontario undergraduate university students in second or higher years. In 1947, this was extended to students at the provincial Technical Institutes. In 1951, Osgoode Hall Law School was added to the list of eligible institutions.

Applicants to this plan were required to be in financial need and have an acceptable standard of proficiency (66 per cent or more on the last set of examinations).

The values of the scholarships are shown in Table 1 below. Initially, the federal government contributed only

Table 1

Dominion-Provincial Student-Aid Scholarship

<u>Institution</u>	<u>Maximum Value of Award</u>	
	<u>1944-45</u>	<u>1945-46</u>
University	\$400	\$200 resident 400 non-resident
Ontario College of Education	300	150 resident 300 non-resident
Ontario Training College for Technical Teachers	250	150 resident 300 non-resident
Ontario College of Art	300	150 resident 300 non-resident
Normal School	200	125 resident 200 non-resident

Source: G.C.A. Cook and D.A.A. Stager,
Student Financial Assistance Programs with Special Reference
to the Province of Ontario, Institute for the Quantitative
 Analysis of Social and Economic Policy (Toronto, U. of T.
 Press, 1969).

for those students beyond their first year of university, but in 1946 this was amended so that Ottawa returned to the provinces 50 per cent of the amount awarded to first-year students at university. The eligibility for allowance was set in March of 1947 at \$2,400 as the basic maximum family income (with a \$200 allowance for each dependent other than the applicant) but the practical allowance became \$2,000.

In 1952-53, the Type B bursaries were opened to students in other than baccalaureate degree courses and \$1,850 was set aside for graduate students.

In 1958, a budget of \$30,000 was approved for special Type A bursary awards to applicants who had an average mark of 80 per cent on eight grade 13 departmental exams in June of 1950. Financial need was not a criterion. In 1959, this plan became the Ontario Scholarship Program under which all eligible grade 13 graduates received \$400. The value of the award was reduced to \$150 in 1968-69.

In March of 1957 a bill was approved and implemented in time for the 1958-59 academic year. The terms of this Ontario Student Aid program limited the maximum amount obtainable by any student to \$500 per year and \$2,000 during the course of a student's education. The interest payments at 4 per cent per annum became the student's responsibility the year following graduation or withdrawal.

The \$3 million budget for this program was never fully used and the program was discontinued upon the introduction of the Canada Student Loans program in 1964.

The Ontario Graduate Fellowships were first introduced in 1963 to encourage more students to enter university teaching careers. Candidates were required to be enrolled in full-time graduate programs, to have a minimum of second class honours (B average) and be recommended by their university department.

Originally, fellowships were awarded in the humanities and social sciences but in 1968 they were also opened to students in pure and applied sciences. The fellowships were intended primarily for Canadian citizens and Ontario residents, but exceptions were made for others who wished to stay and teach in Ontario. The maximum amount of the award was \$1,500 for the winter term and \$750 for the summer term. Originally, the limits were \$2,000 for Masters students, and \$4,500 for Ph.D. students. Now they are \$3,000 for the Masters level, \$5,250 for the Master Phil., and \$7,750 for the Ph.D.

A bill was passed in Parliament in July of 1964, authorizing \$40 million to be made available for loans to full-time post-secondary students in 1964-65. It was to be known as the Canada Student Loans Plan and distributed to provinces proportionately, based on the size of their 18 - 24 year old age groups. The maximum amount of the

loan was \$1,000 per year and \$5,000 over the academic career. The loans were to be made by banks and guaranteed by the government. Interest is paid by the federal government to banks until six months after graduation or withdrawal. Repayment is to be completed within ten years after graduation, based on an arrangement between the bank and the student. In 1965, a means test was instituted to alleviate fears of misuse of funds. In 1966, the federal government transferred responsibility for the administration of this plan to the provinces. In August of 1968 the fixed 5-1/2 - 5-3/4 per cent rates were changed to flexible rates based on the average yield of Government of Canada Bonds. For 1968-69, the interest rate was 6-1/2 per cent.

The success of the Canada Student Loans plan is evident from a quick review of the statistics.

Table 2

<u>Year</u>	<u>No. of Loans</u>	<u>Value</u>	<u>Average Loan</u>
64-65	24,002	14,381,527	\$599
65-66	21,411	15,036,768	\$703
69-70	118,638	77,176,798	\$651
70-71	122,588	85,272,114	\$695

Source: Canadian University & College, July-August
1971, 5.

Increasingly, students are borrowing to finance their

education.

The Ontario Scholarship and Bursary Assistance Fund existed from 1964 to 1966. The Government of Ontario provided grants for scholarships, bursaries and loan assistance, directly to the universities approximately in proportion to their enrolment, in the amounts of \$750,000 in 1964-65, \$1,040,000 in 1965-66, and \$1 million in 1966-67.

The Ontario Student Awards Program (OSAP) was announced in April of 1966. It was based on financial need but contained a formula which would define needs and allocate funds. A specified amount was expected from summer savings--the first \$150 of aid was in the form of a loan and of the remaining portion, 60 per cent was loan and the remaining 40 per cent grant.

In 1967, a ceiling of \$600 per year was placed on the loan portion, the basis of independence from parents was widened, the first \$150 of another award was not deducted from the total amount for which the student was considered eligible and the application form was simplified with reference to family means other than income deleted.

The demand for OSAP grants ran well ahead of government expectations and the budget has always been exceeded. Presently, OSAP is the major program offering aid to post-secondary students in Ontario; its size and growth is evident from the statistics shown in Table 3.

For the 1968-69 academic session, there were approximately 54,000 recipients of OSAP awards; this was about 40 per cent of the full-time enrolment in post-secondary institutions. Female students constituted 31 per cent of the award recipients compared with 38 per cent of the total enrolment.

It is noteworthy that the average award to independent students was \$1,103. This is a larger sum than was awarded to any group of dependent students, even to the group of students coming from families with a gross income of less than \$4,000, and having as many as seven or more dependents.

The distribution of awards and the average size of award by parents' gross income and number of dependents are shown in Tables 4 and 5. In Table 4, the distribution of OSAP awards is compared with the distribution of family incomes.

C. Institutional Support Schemes

Support for post-secondary education is not channelled exclusively through students--in fact the major financial support is channelled through the institutions in the form of formula financing and capital grants. The situation was not always oriented towards governmental support of post-secondary institutions. Prior to formula financing, which was implemented in 1967-68, educational subsidy to the universities was initially through church affiliations and fees and later supplanted by federal and provincial

Table 3

Ontario Student Awards Program: 1966-67 to 1968-69

	No. of Loans	Loans Total Value (thousands)	Average Loan	No. of Grants	Grants Total Value	Average Grant
1966-67						
Universities	20,686	\$10,602	\$545	15,696	\$ 4,252	\$270
Teachers Colleges	1,201	487	406	956	182	190
C.A.A.T.	2,473	1,295	523	2,482	549	222
Others	493	174	348	228	37	161
Totals ¹	24,853	12,556	505	19,362	5,020	260
1967-68						
Universities	30,831	17,367	564	29,873	15,972	534
Teachers Colleges	1,728	861	499	1,666	465	280
C.A.A.T.	5,641	2,794	495	5,475	1,787	326
Others	3,456	2,515	731	1,244	704	566
Totals ¹	41,656	23,537	565	38,258	18,928	496
1968-69						
Universities	33,992	17,288	509	32,593	17,741	544
Teachers Colleges	2,607	1,216	467	2,445	873	357
C.A.A.T.	6,329	3,179	468	8,115	2,798	345
Others	10,670	5,005	469	1,830	917	501
Totals ¹	53,598	26,688	494	44,983	22,329	496

Sources: Report of the Minister of University Affairs, Department of University Affairs, Toronto, 1967.

1967-68 and 1968-69 data were provided by the Department of University Affairs.

Cook and Stager, Student Financial Assistance Programs.

Notes: 1. Totals include amounts for Ontario residents studying outside Ontario, as well as for students at nursing, agricultural and private schools.

Table 4

Percentage Distribution of OSAP Awards to Dependent Students
By Family Gross Income and Number of Dependents, 1968-69

Family Gross Income: Dependents	Under \$4,000	\$4,000 to 5,999	\$6,000 to 7,999	\$8,000 to 9,999	\$10,000 to 11,999	\$12,000 or over
1 or 2	14.1	10.9	12.4	8.9	4.7	3.9
3 or 4	5.7	5.6	8.7	7.0	4.0	3.9
5 or more	1.6	1.8	2.7	1.8	1.1	1.3
Totals	21.4	18.3	23.8	17.7	9.8	9.1
			41.5		18.9	
All Ontario Families (1965)	29.3	22.0	34.1		14.6	

Sources: OSAP data are from unpublished tabulations provided by the Department of University Affairs.

All families income distribution is from Income Distributions, No. 13-529 (Dominion Bureau of Statistics, Ottaws, 1969).

Cook and Stager, Student Financial Assistance Programs.

Table 5

Average OSAP Award to Dependent Students
By Parents' Gross Income and Number of Dependents, 1968-69

Parents' Gross Income:	Under \$4,000	\$4,000 to 5,999	\$6,000 to 7,999	\$8,000 to 9,999	\$10,000 to 11,999	\$12,000 and over
1 or 2	\$1,039	\$ 916	\$ 644	\$ 410	\$ 232	\$ 140
3 or 4	1,058	1,048	826	579	377	245
5 or more	1,082	1,113	1,003	769	571	365

Sources: OSAP data are from unpublished tabulations provided by the Department of University Affairs.

Cook and Stager, Student Financial Assistance Programs

subsidies. The first direct federal government aid went to veterans' retraining institutions in the 1940s, when, in addition to student aid the institutions were paid a flat \$150 per year subsidy for each veteran enrolled. These subsidies continued until 1951 when the bulk of the veterans completed their training.

The Massey Commission submitted their report³ in June of 1951, recommending federal grants to universities. The government responded by voting funds within one week of the report. In 1951-52 the formula was \$.50 per capita of population of the province. Universities within provinces received allotments in proportion to their enrolments.

In 1956 Mr. St. Laurent announced the establishment of the Canada Council to aid research and graduate study in social sciences and the humanities. The per capita grant to the institutions was raised to \$1.00 in the following year. These federal grants were subsequently raised to \$1.50 in 1958, \$2.00 in 1962 and by 1966-67 were around \$5.00 per capita. The advantages of this federal support scheme were:

- a.) Federal grants were distributed on an objective basis (student enrolment).
- b.) Federal grants were not contingent on annual review.

³Vincent Massey, Chairman. Report of the Royal Commission on National Development in the Arts, Letters and Sciences (Ottawa, King's Printer, 1951).

- c.) The grants were open-ended and based only on enrolment.

In October of 1966 a federal-provincial conference was held where the federal government decided to withdraw from direct university financing except for research assistance. In its place the federal government agreed to give up additional taxing power and to give supplements amounting to 50 per cent of operating costs of all post-secondary institutions.

After 1966 the dependence of universities on the provincial government became pre-eminent as student fees constituted only 20 per cent and private gifts less than 1 per cent of costs.

The method used to distribute the federal-provincial funds was by means of a formula which:

- a.) reflected the relative costs of the various types of instruction offered, and,
- b.) ensured each university knowledge of its income for planning purposes.

The perceptions of how well the formula has succeeded are revealed in the following two tables which represent the results of a questionnaire survey done at the universities of Ontario.

As can be seen from Table 6 a number of disadvantages are inherent in the formula. Of greatest concern is the pressure to increase enrolment beyond academically

Table 6

Evaluation of Disadvantages of Formula Financing
By Ontario Professors and Administrators

<u>Type of Disadvantage</u>	<u>Responses</u>	<u>Percentage</u>
Pressure to increase enrollment	321	17.2
Over-expansion	242	12.9
Poor financing of emerging universities	232	12.4
Difficulty of maintaining academic balance	188	10.1
Reclassification of students	179	9.6
Used as spending budget	168	9.0
Discontinuing of low-enrollment courses	128	6.8
Balkanization	118	6.4
Freezing of low-enrollment courses	106	5.6
Withholding of money from programs	50	2.7
No disadvantages	63	3.4
No response given	78	-
TOTAL	N = 1946	100.00

Source: C. Hanly, Who Pays? University Financing in Ontario, James Lewis and Samuel, Toronto, 1970, p.96.

desirable levels to produce income, especially in the case of large, mature institutions.

The fact that the formula system is based on the operating costs of established large institutions (i.e. Toronto) which can reap the benefits of economies of scale, (i.e. operate more cheaply, if not more efficiently, because they are serving a larger student population and can spread their fixed costs over a number of programs with relatively high student enrolments) works to the disadvantage of emerging universities which may not have yet reached a viable size to operate their programs.

Because of the economic pressures there is an inherent danger that academic balance among program offerings will be sacrificed, with emphasis being placed on "profitable" programs to grow--perhaps beyond an academically desirable size--to support "less profitable" programs. The economic incentives in formula finance could easily lead to the Balkanization of departments with the resultant illogical practices of, say, engineering faculties attempting to offer English and history courses. Within faculties, strong incentives do appear to reclassify students into more profitable categories and to consider the discontinuation or "freezing " of low-enrolment courses without regard for the overall quality of the services and education offered the student.

But the formula should not be viewed with complete

scepticism. (See Table 7.) A number of advantages have been attributed to it, especially since the days of line item budget reviews and "golden-throated oratory" are over. It does provide a mechanism for a rational, impartial and fair distribution of funds among the various institutions. This has led to the demise of destructive rivalries and the atmosphere of suspicion which surrounded the earlier grant system.

The formula has worked to safeguard the autonomy of institutions in that they no longer have to justify internal expenditures and can more easily plan for the future, since all but the young emerging institutions should be able to predict their enrolments with some certainty from year to year. It provides the capability of measuring the income-earning contributions of various departments within the university and similarly the contributions of the faculty. Because the formula is open-ended it allows for the production of more money, generated presumably by an increase in students who were attracted by improved instruction and services. In this sense, the formula sets a priority on instruction and the maintenance of a reasonable menu of well-attended programs and away from the proliferation of esoteric, research-type programs with low attendance.

The formula certainly does not provide a panacea for the problems of financing institutions, but it does provide a

Table 7

Evaluation of Advantages of Formula Financing
By Ontario Professors and Administrators

<u>Type of Advantage</u>	<u>Responses</u>	<u>Percentage</u>
Fair distribution	414	31.9
Reduction of inter-university rivalry	275	21.2
Ordering of priorities	179	13.8
Safeguarding of autonomy	170	13.1
Allowing department to measure contribution	59	4.6
Production of more money	57	4.4
Market place competition	51	3.9
Allowing faculty to measure contribution	20	1.5
No advantages	72	5.6
No response given	128	-
TOTAL	N = 1425	100.00

Source: C. Hanly, Who Pays? University Financing in Ontario, James Lewis and Samuel, Toronto, 1970, p.95.

rational framework for allocating funds between governments and institutions. The dangers inherent in the formula depend upon the policies adopted by the administrations of the various institutions. On balance, the formula should certainly be viewed as a step forward.

The preceding views are heavily oriented to the academic community. They reflect the views of administrators and university faculty who have some vested interest in the application of the formula financing scheme. In order to provide a balanced view of formula financing it is necessary to do at least two further things:

- 1.) Outline the aims and objectives of the government in applying the scheme, and
- 2.) Compare it to financing schemes which exist in other countries of the world, such as Britain.

The idea of devising a formula⁴ for allocating operating grants involved agreement among university presidents, the Committee on University Affairs, and the Minister of University Affairs. It was also strongly endorsed by the Bladen Commission in its report on the financing of higher education.

The purpose of the formula was to provide an objective mechanism for determining the share of the total provincial operating grant to be allocated to each university. The

⁴Report of the Minister of University Affairs of Ontario 1967-68, Ontario Department of University Affairs, Toronto, 1969.

use of a formula for such a distribution presupposes that an amount sufficient, together with other major sources of income, to enable the university system to continue at its present level of excellence would be available. It was felt that while the formula would ensure equitable distribution of the monies, it would not, in itself, ensure an adequate level of support.

The formula was not intended to limit or control the expenditure of funds granted to the universities; its sole purpose was to determine a basic operating income for each university. The formula was designed to do two things:

- a.) reinforce the independence of universities by ensuring a basic income to each institution without the ever closer scrutiny of operating budgets necessarily involved in subjective review.
- b.) provide a more certain basis for university planning, give universities maximum incentive for effective management and allow the healthiest kind of competition among universities for achievement.

The above advantages are both obvious and desirable to the institutions. From the government's standpoint, the formula adopted provided several attractions such as:

- a.) obviating the necessity of detailed scrutiny of university operating submissions. Attention could then be turned to the major questions of overall levels

of support, co-ordination of long-range plans, and the special needs of new institutions.

- b.) provide equitable treatment for the institutions.
- c.) ensure to private donors that gifts for operating purposes will be an added resource to the university and not a substitute for public support.

Most of the possible objections to the formula idea have to do with probable inadequacies of the formula in achieving its objectives rather than with the objectives themselves. It has been argued that a mechanical system of grants would produce mediocrity or sameness in all universities. It is felt that this will only be a danger if:

- a.) the level of government support is not high enough to maintain quality
- b.) the system is such as to discourage would-be donors from giving private support for special projects in special areas of excellence
- c.) the individual institutions fail to use the grant support which they receive with effective imagination.

The formula consists of a set of general principles and the following points are the basis on which the formula was constructed:

- a.) the formula should be as simple as possible, consistent with achieving its objectives

b.) for the purpose of the formula income would come from two major sources:

i.) standard tuition fees for the enrollment or portion thereof counted in the formula calculations, and

ii.) provincial government grants designated as basic operating income

c.) the formula roughly reflects the relative costs of the various types of instruction offered but it is felt that no exact relationship is possible or necessary

d.) the formula operates in such a way as to ensure to each university certain knowledge of its income for planning purposes.

e.) provision is made for review of the formula on a continuing basis taking into account cost study information as it becomes available and other evidence of significant shifting within the agreed weighted categories.

In summary, it is well to remind ourselves of the specific utility of formula financing. The specific benefits are:

1.) A more equitable distribution of the public funds through the universities.

2.) An objective basis for awarding grants, avoiding both subjectivity and distorting political and other influences.

3. A greater measure of predictability and a better basis for rational academic planning by the universities.

These benefits validate formula financing as a method for distributing public grants to the universities. In addition, formula financing guarantees administrative autonomy to the universities, and guarantees a broad measure of academic autonomy.

To provide a more balanced perspective of the operation of the formula⁵ in Canada, let us turn to the situation in Great Britain. There, the universities conditionally enjoy a substantial measure of control over their size and rate of growth, and over the allocation of their income from various sources among the different categories of expenditure. The very large part played by university education in the economy in the nation's life and the large sums of public money - constituting more than 80 per cent of university revenue - needed to finance it, give the government a substantial interest in university finance and development. To ensure that this does not impair university autonomy a University Grants Committee stands between the government and the institutions.

The terms of reference of the University Grants Committee are: "to enquire into the financial needs of university education in Great Britain; to advise the government as

⁵ Higher Education (Appendix Four, Part 1, Section 2)
Administrative, Financial and Economic Aspects of
Higher Education, Committee appointed by the Prime
Minister under the Chairmanship of Lord Robbins 1961-
 1963. London - Her Majesty's Stationery Office.

to the application of any grants made by Parliament toward meeting them; to collect, examine and make available information relating to university education throughout the United Kingdom, and to assist, in consultation with the universities and other bodies concerned, the preparation and execution of such plans for the development of the universities as may from time to time be required in order to ensure that they are fully adequate in national needs."

The question of university autonomy arises most frequently in relation to public expenditure on the universities, and it is here the committee's role is seen in clearest relief. The committee has a dual task:

- a.) to advise the treasury on the total money made available to the universities; and
- b.) to allocate the total provision among the universities.

The grants made on the recommendations of the committee are of two kinds - recurrent and non-recurrent. The totals of these two sorts of grants are determined when the expenditure is controlled in different ways.

Non-recurrent grants are given on an annual basis for capital development. They cover four categories of expenditure:

1. Erection and adaptations of buildings
2. Purchase of equipment and furniture for new buildings
3. Payment of professional fees
4. Purchase of sites and properties.

The non-recurrent grant expenditures are not comparable with the provincial operating formula grants and are analogous to provincial capital grants.

In contrast to the non-recurrent grants (which are made for specific projects), recurrent grants to the universities are in the main block grants in aid of recurrent university expenditure. Their amounts are calculated for periods of five academic financial years, normally on a rising scale for each year. The five-year settlement does not preclude review of the amounts during the course of the five years.

With recurrent, as with non-recurrent grants, the government decides, after receiving advice from the university grants committee, the total amount for each of the five years; the allocation of this total among universities is the responsibility of the Committee. The grant, once received by the universities is allocated at their discretion.

The determination of the recurrent grants for a five-year budget begins with the committee's visitations to the university; these may cover five university terms, and are begun two years or so before the submission is due to

be made to the government. These visitations enable the committee to gain the necessary background information preparatory to advising the government on the universities' needs for the coming five years, and give the committee the opportunity to gage at first hand the prevailing feeling and opinion in the various universities. The second stage in the process begins soon after the program of visitations has begun. Forms are distributed by the committee on which each university is asked to give particulars of its five-year estimates and development plans; developments are, of course, conditioned by the building program which is now known well in advance of the recurrent grant settlement. The committee then analyses and assesses these estimates and plans, and submits to the Chancellor by the end of the summer in the fifth year of the five-year budget a confidential report embodying its recommendations.

When the report has been considered, a decision on the total amount of the recurrent grant is made by the government. An announcement is made to Parliament in March on the total recurrent grants being made available for the following August. At about the same time, an interim report by the Committee on University Development during the current five-year budget is published as a white paper. The final stage is that, following the announcement, the committee allocates to each university a share of the total made available.

Within this framework, the universities enjoy complete autonomy in the determination of the content of education and in the control of degree standards. Each university independently determines the balance between teaching and research, though general considerations can be, and have been, brought to the notice of the university by the University Grants Committee. The selection of growing points or lines of research is also a matter for the universities themselves.

From the above, it can be seen that the financing of higher education in Britain parallels the situation in Ontario except for the fact that the actual allocation of funds by the government is decided on the basis of committee recommendations rather than a formula. With this type of system there is a possibility that the judgements will be less impartial than the application of a formula. The allocation of funds in five-year blocks also restricts the responsiveness of the funding of an institution and its growth pattern. There surely must be some delay in receiving additional fund support in years of extraordinary enrolment growth.

Overall then, it appears that while the formula financing scheme employed in Ontario is imperfect and does have some limitations it compares favourably with the systems employed elsewhere and generally does meet its main objectives.

CHAPTER II

A. The Situation in Post-Secondary Education 1968-69

Before analyzing the various financing schemes it is necessary to define a "base case" which provides an economic benchmark against which we can measure the alternatives. The year 1968-69 is a convenient base of measurement as a previous study¹ contains much of the relevant information required to do the analysis.

In 1968-69 approximately 160,000 full-time equivalent students attended post-secondary institutions; their attendance by institution type is indicated in Table 8. It can be seen that the vast majority of these went either to a university or a community college which accounted for 87.2 per cent of the total enrolment.

In allocating resources among alternative uses, the two most important decision-criteria are their costs and benefits. Although the student may view the benefits of post-secondary education as increased lifetime earnings, the taxpayer who himself did not attend, or whose children do not attend post-secondary education, may have an entirely different perspective. For this taxpayer, benefits are difficult to define but costs remain eminently real in the form of taxes.

¹Systems Research Group, The Costs and Benefits of Post-Secondary Education, A Study prepared for the Commission on Post-Secondary Education, March, 1971.

Table 8

Summary of
1968-69 Enrolment Statistics
By Institution Type

INSTITUTION TYPE	ENROLMENT IN FULL-TIME EQUIVALENT	PERCENTAGE OF TOTAL
UNIVERSITIES	101,427	63.6
COMMUNITY COLLEGES	37,623	23.6
TEACHERS' COLLEGES	10,863	6.8
NURSING SCHOOLS	8,867	5.6
AGRICULTURAL COLLEGES	705	.4
TOTALS	159,485	100.0

Source: S.R.G., Cost and Benefit Study, School Year 1968-69

The Trial Balance generated in the cost model may be aggregated to produce a table (see Table 9) which lacks the detailed mapping of each financial transaction.

In order to facilitate reading Trial Balance Aggregates, two definitions are required.

i.) Direct Costs

These are the costs which represent actual expenditures which have occurred and been paid in the time period under consideration (1968-69).

a.) Institution

The institutional direct costs consist of expenditures on:

- i.) student awards
- ii.) salaries and operating expenses
- iii.) expenditures due to depreciation
such as replacement of assets
- iv.) repayments of current debts and
related interest payments.

b.) Students

Student expenditures consist of:

- i.) tuition costs
- ii.) equipment expenditures

c.) Government

Government expenditures consist of

- i.) operating grants
- ii.) student aid program covering grants,
loans and fellowships

iii.) capital grants and capital financing

iv.) rebates of sales taxes

d.) Rest-of-the-Economy

Private Business expenditures consist mainly of gifts to the institution, either through large private donations or through alumni funds. This holds true only for universities as no gifts were indicated for the other institutions.

ii.) Opportunity Costs

These are costs which do not appear in conventional accounting records and do not entail actual dollar outlays. They represent the earnings that might have been realized if the assets currently used in post-secondary education had been applied to some other (presumably more profitable) alternate use.

a.) Institution

The institution opportunity costs are associated with the possible returns from the institutional employed capital (land, buildings, funds).

b.) Student

Student opportunity costs consist of foregone interest on tuition and equipment expenses as well as foregone earnings.

c.) Government

Government opportunity costs consist of foregone

interest on all of its direct costs as well as foregone taxes on the opportunity costs of the other sectors of society and the institution.

d.) Rest-of-the-Economy

The opportunity costs in this sector consist of foregone interest on gifts made.

iii.) Discussion of Results

The results of any study are strongly influenced by the assumptions:

- a.) All costs used in the Trial Balance are as taken from the primary sources and exclude (insofar as was possible) the costs of sponsored research.
- b.) The cost of maintaining the student aid loan program was taken as 6.5 per cent of total loans.
- c.) The overall depreciation rate on buildings and equipment was taken as 5.7 per cent (representing the average of a 40-year lifespan for buildings and five years on equipment).
- d.) The new construction is to the extent of depreciation with a 4 per cent rebate of sales tax.
- e.) The opportunity rate on all costs was 7 per cent.
- f.) The tax rate on foregone student earnings was 10 per cent.
- g.) The tax rate on foregone earnings from institutional employed capital was 50 per cent.
- h.) The foregone municipal taxes were 2 per cent of

land, buildings and equipment.

Table 9 outlines the costs of operating all of the institutions in Ontario and includes estimates of opportunity costs to operate the institutions. It cost society over \$1 billion in educational expenditures in the same year. Most of the difference in societal and institutional costs arises because of the earnings foregone by students attending post-secondary institutions and by interest foregone by government through investment in the institutions.

It is interesting to note that the major portion of students' economic contribution to educational expenditure comes from foregone earnings which constitute 80.8 per cent of students' costs while direct costs (through tuition, fees, equipment) contribute 19.2 per cent. In contrast, the government and private sector contributions are basically in direct costs, 78.5 and 96.5 per cent respectively.

Students contributed very little of the direct costs of education, only 11.8 per cent, while the government paid 85.6 per cent. The remainder came from various private sources. When opportunity costs are considered, however, the student's contribution rises significantly to 35.3 per cent of total costs with the government and private contribution dropping to 63.1 and 1.6 per cent respectively.

The comparable university expenditures are indicated in Table 10 and the total Ontario costs are summarized in

Table 9

ALL INSTITUTIONS
1968-69 TRIAL BALANCE AGGREGATE

(A)
EXPENDITURES IN MILLIONS OF DOLLARS

	INST (0)	STUDENT (1)	GOVT (2)	REST (3)	SOCIETY (1+2+3)
Direct Costs	511.82	69.87	509.16	15.58	594.61
Opportunity Costs	34.66	293.78	139.83	0.57	434.18
Total Costs	546.48	363.65	648.99	16.15	1028.79

(B)
PER CENT EXPENDITURES BY COLUMN

	INST (0)	STUDENT (1)	GOVT (2)	REST (3)	SOCIETY (1+2+3)
Direct Costs	93.7	19.2	78.5	96.5	57.8
Opportunity Costs	6.3	80.8	21.5	3.5	42.2
Total Costs	100	100	100	100	100

(C)
PER CENT EXPENDITURES BY ROW

	INST (0)	STUDENT (1)	GOVT (2)	REST (3)	SOCIETY (1+2+3)
Direct Costs	-	11.8	85.6	2.6	100
Opportunity Costs	-	67.7	32.3	0.1	100
Total Costs	-	35.3	63.1	1.6	100

Source: S.R.G., Cost and Benefit Study.

Table 10

UNIVERSITIES
1968-69 TRIAL BALANCE AGGREGATE

(A)
EXPENDITURES IN MILLIONS OF DOLLARS

	INST (0)	STUDENT (1)	GOVT (2)	REST (3)	SOCIETY (1+2+3)
Direct Costs	396.72	53.53	405.16	15.60	474.29
Opportunity Costs	30.82	213.74	115.60	.57	329.91
Total Costs	472.54	267.27	520.76	16.17	804.20

(B)
PER CENT EXPENDITURES BY COLUMN

	INST (0)	STUDENT (1)	GOVT (2)	REST (3)	SOCIETY (1+2+3)
Direct Costs	92.8	20.0	77.8	96.5	59.0
Opportunity Costs	7.2	80.0	22.2	3.5	41.0
Total Costs	100	100	100	100	100

(C)
PER CENT EXPENDITURES BY ROW

	INST (0)	STUDENT (1)	GOVT (2)	REST (3)	SOCIETY (1+2+3)
Direct Costs	-	11.3	85.4	3.3	100
Opportunity Costs	-	64.8	35.0	0.2	100
Total Costs	-	33.2	64.8	2.0	100

Source: S.R.G., Cost and Benefit Study.

Table 11

Cost Summary of Institutional and
Societal Expenditures

(A)

INSTITUTION	INSTITUTIONAL EXPENDITURE	%	SOCIETAL EXPENDITURE
University	427.54	78.3	804.20
Community College	74.61	13.7	137.90
Teachers' College	21.02	3.8	37.87
Nursing	20.36	3.7	45.24
Agriculture	2.95	.5	4.21
TOTALS	546.48	100.00	1029.42

Summary of Percentage of Costs
borne by Societal Sectors

(B)

INSTITUTION	STUDENT	GOVERNMENT	REST
University	33.2	64.8	2.0
Community College	46.2	53.8	0
Teachers' College	50.5	49.5	0
Nursing	36.3	63.7	0
Agriculture	26.8	73.2	0
AVERAGE	35.3	63.1	1.6

Source: S.R.G., Cost and Benefit Study.

Table 12
UNIVERSITIES
INSTITUTIONAL COST PER YEAR PER STUDENT
BY PROGRAM (UNDERGRADUATE)

PROGRAM NAME	1st YEAR	2nd YEAR	3rd YEAR	4th YEAR	5th YEAR	6th YEAR
AGRICULTURE	5064	5064	5064	5064	-	-
ARCHITECTURE	5064	5064	5064	5064	5064	-
COMMERCE	3803	3803	3803	3803	-	-
DENTISTRY	2542	7586	7586	7586	7586	-
ENGINEERING	5064	5064	5064	5064	-	-
FINE AND APPLIED ARTS	3803	3803	3803	3803	-	-
FORESTRY	5064	5064	5064	5064	-	-
HOUSEHOLD AND FOOD SCI.	5064	5064	5064	5064	-	-
HYGIENE - PUBLIC HEALTH	0	0	0	0	-	-
JOURNALISM	2542	2542	2542	2542	-	-
LAW	3803	3803	3803	3803	3803	-
LIBRARY SCIENCE	2542	2542	2542	3803	-	-
PREMEDICINE & MEDICINE	2542	2542	7586	7586	7586	7586
MUSIC	5064	5064	5064	5064	-	-
NURSING	5064	5064	5064	5064	-	-
PHARMACY	5064	5064	5064	5064	-	-
PHYSICAL & HEALTH EDUC.	3803	3803	3803	3803	-	-
PHYSICAL & OCC.THERAPY	2542	3803	3803	0	-	-
SOCIAL WORK	2542	2542	2542	0	-	-
VETERINARY MEDICINE	7586	7586	7586	7586	-	-
THEOLOGY	2542	2542	2542	0	-	-
HON.GEN.ART 1/GEOGRAPHY	2542	2542	2542	0	-	-
HON.ART UPPER/HUMANITIES	2542	3803	3803	3803	-	-
HON.GEN.SCI /PHYS-BIOL	2542	2542	2542	0	-	-
UPPER YRS.HON.SCI/MATH	2542	5064	5064	5064	-	-
SECRETARIAL/CHILD STUDY	2542	2542	2542	0	-	-
HOSPITAL ADMIN.	0	0	0	0	-	-
LANDSCAPE ARC/PSYCH.	5064	5064	5064	5064	-	-
PUBLIC ADMIN.	0	-	-	-	-	-
DIP.PUBLIC AD/RES.	2542	-	-	-	-	-
SOCIAL SCIENCE	2542	-	-	-	-	-
DIP. GENERAL ARTS	2542	-	-	-	-	-
DIPLOMA COMMERCE	2542	-	-	-	-	-
DIPLOMA MUSIC	5064	-	-	-	-	-
DIPLOMA NURSING	2542	-	-	-	-	-
DIP.PHYS.OCC.THERAPY	3803	-	-	-	-	-
DIP.GEN.SCIENCE	2542	-	-	-	-	-
DIP.NURSING TECH.	2542	-	-	-	-	-
DIPLOMA DENTAL HYG.	5064	-	-	-	-	-
DIP.PUBLIC HLTH.NURSING	5064	-	-	-	-	-
DIP.TECH. COURS.	2542	-	-	-	-	-
DIP. PRELIM. YEAR	1786	-	-	-	-	-
DIP.MED.INTERN-RESID.	3803	-	-	-	-	-
OISE	0	-	-	-	-	-

Source: S.R.G. Cost and Benefit Study.

Table 13
UNIVERSITIES
INSTITUTIONAL COST PER YEAR PER STUDENT
BY PROGRAM (GRADUATE)

PROGRAM NAME	MASTERS		Ph.D		THESIS ONLY
	1st YEAR	DIPLOMA	1st YEAR	2nd STAGE	
AGRICULTURE	0	0	10108	15152	2542
ARCHITECTURE	5064	2542	10108	0	2542
COMMERCE	3803	2542	5064	15152	2542
DENTISTRY	0	2542	10108	0	2542
ENGINEERING	5064	2542	10108	15152	2542
FINE & APPLIED ARTS				0	0
FORESTRY	5064	2542	10108	15152	2542
HOUSEHOLD AND FOOD SCI.	5064	0	10108	15152	0
HYGIENE-PUBLIC HEALTH	5064	2542	10108	15152	2542
JOURNALISM	0	2542	0	0	0
LAW	0	0	7586	15152	2542
LIBRARY SCIENCE	3803	0	7586	0	0
PREMEDICINE & MEDICINE	7586	2542	10108	15152	2542
MUSIC	5064	0	10108	15152	2542
NURSING	5064	0	10108	0	2542
PHARMACY	5064	0	10108	15152	2542
PHYSICAL & HEALTH EDUC.	3803	0	7586	0	0
PHYSICAL & OCC.THERAPY	0	2542	0	0	0
SOCIAL WORK	2542	0	5064	15152	2542
VETERINARY MEDICINE	0	2542	10108	15152	0
THEOLOGY	0	0	0	0	0
HON.GEN.ART 1/GEOGRAPHY	2542	0	10108	15152	2542
HON.ART UPPER/HUMANITIES	3803	2542	7586	15152	2542
HON.GEN.SCI. 1/PHYS-BIOL	0	2542	10108	15152	2542
UPPER YRS.HON.SCI/MATH	5064	2542	7586	15152	2542
SECRETARIAL/CHILD STUDY	0	2542	0	0	0
HOSPITAL ADMINISTRATION	0	2542	5064	0	0
LANDSCAPE ARC/PSYCHOLOGY	0	0	10108	15152	2542
PUBLIC ADMINISTRATION	2542	2542	5064	0	2542
DIP.PUBLIC AD/RES SOC.SC.	0	2542	7586	15152	2542
DIPLOMA GENERAL ARTS	0	0	0	0	0
DIPLOMA COMMERCE	0	0	0	0	0
DIPLOMA MUSIC	0	0	0	0	0
DIPLOMA NURSING	0	0	0	0	0
DIPLOMA PHYS.OCC.THERAPY	0	0	0	0	0
DIPLOMA GEN.SCIENCE	0	0	0	0	0
DIPLOMA NURSING TECH.	0	0	0	0	0
DIPLOMA DENTAL HYGIENE	0	0	0	0	0
DIP.PUBLIC HLTH.NURSING	0	0	0	0	0
DIPLOMA TECHNOLOGY COURS.	0	0	0	0	0
DIPLOMA PRELIMINARY YR.	0	0	0	0	0
DIP.MED.INTERN-RESID.	0	0	0	0	0
OISE	5064	0	10108	15152	0

Source: S.R.G., Cost and Benefit Study.

Table 14

COMMUNITY COLLEGES
INSTITUTIONAL COST PER YEAR PER STUDENT BY PROGRAM

PROGRAM NAME	1st YEAR	2nd YEAR	3rd YEAR
3 YEAR BUSINESS	1732	1732	1732
2 YEAR BUSINESS	1732	2165	0
1 YEAR BUSINESS	1732	0	0
3 YEAR APPLIED ARTS	1732	1732	1732
2 YEAR APPLIED ARTS	1732	1732	0
1 YEAR APPLIED ARTS	1732	0	0
3 YEAR TECHNOLOGY	2165	2165	3248
2 YEAR TECHNOLOGY	2165	2165	0
1 YEAR TECHNOLOGY	2165	0	0
APPRENTICESHIP TRAINING	2165	2165	2165
OTHER	1299	0	0
MANPOWER RETRAINING	2165	0	0
BUSINESS	1732	1732	1732
TECHNICAL	2165	2165	3248
ARTS	1732	1732	1732
HEALTH	4330	4330	4330

TEACHERS COLLEGES
INSTITUTIONAL COST PER YEAR PER STUDENT BY PROGRAM

PROGRAM	1st YEAR	2nd YEAR	3rd YEAR
TEACHER TRAINING 1 YEAR	1935	0	0
TEACHER TRAINING 2 YEAR	1935	1935	0
TEACHING UNIVERSITY GRAD.	1935	0	0
PRIMARY SPECIALIST	1935	0	0

Source; S.R.G., Cost and Benefit Study.

Table 15

NURSING SCHOOLS
INSTITUTIONAL COST PER YEAR PER STUDENT BY PROGRAM

PROGRAM NAME	1st YEAR	2nd YEAR	3rd YEAR
NURSING 2 YEAR	2296	2296	0
NURSING 2 YEAR PLUS 1	2296	2296	2296
NURSING 3 YEAR	2296	2296	2296

AGRICULTURAL COLLEGES
INSTITUTIONAL COST PER YEAR PER STUDENT BY PROGRAM

PROGRAM NAME	1st YEAR	2nd YEAR	3rd YEAR
AGRICULTURE	4183	4183	0
HOME ECONOMICS	4183	4183	0
ANIMAL HEALTH	4183	4183	0
DAIRY SHORT COURSE 3 MONTH	4183	0	0

Source: S.R.G., Cost and Benefit Study.

Table 11. The magnitude of the costs being encountered to operate the universities is shown for a number of selected programs in the undergraduate years in Table 12. These costs range from \$2,542 to \$7,586 per year. Presumably, these figures are proxies for full cost tuitions which would have to be charged to operate the institutions and provide a lower limit on the students' costs (the student could borrow to pay for books, residence, food, etc.). More grossly, there are 101,427 full-time equivalent students and a total institutional cost of \$464.53 million. The average cost per student then, would be in the neighbourhood of \$4,580. Table 13 indicates that graduate costs are not significantly higher for the Master's level programs but increase dramatically for the Ph.D. program. (These figures depend to a high degree on the category weights of formula financing, i.e. \$10,000 per year for the first year of the Ph.D. program and \$15,000 for the second.)

Table 14 describes the costs for community college and teachers' college programs by year. Except for the Health course in the community colleges, which costs \$4,330 per year, most of the other courses could easily be financed by tuition levels of around \$2,000.

Table 15 indicates the institutional costs for nursing schools and agricultural colleges. The nursing schools appear to cost approximately as much as the community and

TABLE 16
UNIVERSITY - UNDERGRADUATE
INSTITUTIONAL DEGREE (DIPLOMA) COSTS BY PROGRAM

PROGRAM NAME	TOTAL COST PER STUDENT (1)
Agriculture	20,256
Architecture	25,320
Commerce	15,212
Dentistry	32,886
Engineering	20,256
Fine & Applied Arts	15,212
Forestry	20,256
Household & Food Science	20,256
Journalism	10,168
Law	22,818
Library Science	11,429
Pre-Medicine & Medicine	35,428
Music	20,256
Nursing	20,256
Pharmacy	20,256
Physical & Health Education	15,212
Physical & Occupational Therapy	10,148
Social Work	7,626
Veterinary Medicine	30,344
Theology	7,626
Hon. Gen. Art 1/Geography	7,626
Hon. Gen. Sci. 1/Physics-Biology	7,626
Upper Yrs. Hon. Science/Mathematics	20,256
Secretarial/Child Study	7,626
Landscape Arc/Psychology	20,256
Hon.Arts Upper/Humanaties	13,951

Source: SRG, Cost and Benefity Study

TABLE 17

STUDENT DEGREE COSTS

PROGRAM NAME	STUDENT COST
Agriculture	2442
Architecture	4293
Commerce	2442
Dentistry	4148
Engineering	2774
Fine and Applied Arts	2454
Forestry	2618
Household and Food Science	2471
Journalism	2508
Law	3102
Library Science	2454
Premedicine and Medicine	4446
Music	2319
Nursing	2905
Pharmacy	1931
Physical and Health Education	2514
Physical and Occ Therapy	1810
Social Work	1871
Veterinary Medicine	2567
Theology	1567
Hon. Gen. Art 1/Geography	1855
Hon. Art Upper/Humanities	1976

Source: SRG, Cost and Benefit Study

TABLE 18

FULL COST TUITION LEVELS WITH ALL
OPPORTUNITY COSTS INCLUDED

	Under Graduate	Masters	Ph.D .	Thesis
Arts & Science	\$ 2,542	2,542 - 5,064	10,108	2,542
Professional	5,064	5,064	10,108	2,542
Medicine	7,586	7,586	10,108	2,542

Source: SRG, Cost and Benefit Study

TABLE 19

FULL COST TUITION LEVELS WITH ALL
OPPORTUNITY COSTS INCLUDED EXCEPT DEPRECIATION
AND STUDENT FOREGONE EARNINGS

	Under Graduate	Masters	Ph.D	Thesis
Arts & Science	2,360	2,360 - 4,699	9,378	2,360
Professional	4,699	4,699	9,378	2,360
Medicine	7,038	7,038	9,378	2,360

Source: SRG, Cost and Benefit Study

Table 20

FULL COST TUITION LEVELS
DIRECT COSTS ONLY

	UNDER GRADUATE	MASTERS	Ph.D.	THESIS
Arts & Science	2,006	2,006 3,991	7,962	2,006
Professional	3,991	3,991	7,962	2,006
Medicine	5,977	5,977	7,962	2,006

Source: S.R.G., Cost and Benefit Study

teachers' colleges while the agricultural colleges cost somewhere in the range of universities (i.e. double the community and other college costs).

An aggregate perspective of what this means in terms of actual outlay to the university students is indicated in Table 16. This table shows the total amount the student would spend over the course of obtaining a degree if he were to complete each year successfully. The sums indicated are by no means small as they range from a low of \$7,626 to a high of \$35,428.

Essentially, these are the amounts which would have to be provided through student aid (whether through grants or loans) assuming no contributions from the student's family or from the student except in the form of foregone earnings.

The actual costs (expenditures by students in these programs for tuition and equipment) are shown in Table 17. Clearly there are discrepancies in costs, especially in the "expensive" programs such as medicine where the institutional cost is \$35,428 and the student contributes \$4,446, not all of which is tuition.

The picture of institutional costs may be summarized in Tables 18, 19 and 20.

From these tables it may be seen that the removal of opportunity costs may reduce the institutional costs of offering a program to a student by about 7 per cent if depreciation is not included and by 21 per cent if all

opportunity costs are excluded. In dollar terms the reduction in institutional costs per year per student are as shown in Tables 21 and 22. Clearly, opportunity costs represent a significant portion of total institutional costs and cannot be lightly dismissed.

From the above it can be seen that the cost per year of going to university would range from \$2,000 to \$8,000 even if all opportunity costs were excluded.

Table 21

REDUCTION IN FULL COST TUITION LEVELS
UPON REMOVAL OF DEPRECIATION COSTS
FROM TOTAL COSTS*

	UNDER GRADUATE	MASTERS	Ph.D.	THESIS
Arts & Science	182	182- 365	730	182
Professional	365	365	730	182
Medicine	548	548	730	182

Source: S.R.G., Cost and Benefit Study

* Total Costs = Direct Costs + All Opportunity Costs

Table 22

REDUCTION IN FULL COST TUITION LEVELS
UPON REMOVAL OF OPPORTUNITY COSTS
FROM TOTAL COSTS

	UNDER GRADUATE	MASTERS	Ph.D.	THESIS
Arts & Science	\$ 536	\$ 536- \$1,073	\$2,146	\$ 536
Professional	\$1,073	\$1,073	\$2,146	\$ 536
Medicine	\$1,609	\$1,609	\$2,146	\$ 536

Source: S.R.G., Cost and Benefit Study

B. Various Forms of Financing

There are basically two questions to be answered in financing post-secondary education:

- a.) Who should pay for the education?
- b.) How will the payment be made?

The question of who should pay involves an implicit assumption about the objectives of higher education.

Some people are primarily impressed by the private benefits of higher education, especially those reflected in the money incomes of graduates and former students. Those who emphasize the private benefits see no reason why the taxpayer should subsidize higher education. They would offer higher education for sale to those who wish to purchase it at a price reflecting its cost.

If one takes this extreme position of treating higher education like other private goods, then the main problem about higher education finance seems to be the fact that higher education costs are incurred in a large lump early in life while the benefits occur over a much longer period. Hence, people will be reluctant to buy higher education unless they can borrow to finance the cost and repay the loan over a long period.

Those who see the benefits of higher education as primarily external to the student feel that the public should bear the major cost of higher education as it does in elementary and secondary education, either by providing

free public higher education to all, or by providing students with direct grants which will enable them to cover the cost of higher education. People who take this general position are usually negative about all student loan programs. They feel that low-income students will be discouraged from obtaining higher education if they have to borrow and they regard it as unfortunate to burden any student with educational debt at the beginning of his career.

Actually, relatively few people take either the extreme view that higher education should be totally unsubsidized or the view that it should be totally subsidized. The question is "What is the right amount of sharing between students and society?"

The second question deals with how the payments are to be made. They can be made

- a.) by the student
- b.) by the student's parents
- c.) by private donations
- d.) by the government: federal, provincial, or both.

The form of the payment is important--whether it should be grant or loan, and whether the payment should be channelled through the institution, through the students or through the students' parents.

The problem of investment in education essentially is one of how much to invest and who is to pay. The possibility of over-investment on the part of students is very

real, since the typical college graduate may earn more than 12 per cent on his investment because he does not pay all of the costs of his higher education. As total costs are higher than private costs, the student may be expected to invest in post-secondary education only up to the point where the return is attractive on his investment, although the return on total costs may not be.

The forces counteracting the possibility of over-investment in higher education are several; students may be unsure of their ability to do college work. They are investing at an early age in skill and knowledge that must serve over a long time horizon and their time horizon may be very short--employment, independence and earnings after high school may appear more attractive. Also, even students who feel they have the ability to cope with higher education and believe that their future earnings would make it worthwhile may discover that the capital markets do not make sufficient funds available to borrow for this education, especially if they must borrow to cover both tuition and foregone earnings.

There are a number of ways in which demand for higher education could be induced:¹

a.) Reduce costs through use of low-cost institutions

¹For a fuller discussion see J. C. Hartline, "A Study of the Capital Market for Student Debt Financing of Higher Education" unpublished Ph.D. Thesis, Rutgers University, N. J., 1970.

i.e. commuter colleges or community colleges which do not have athletic fees, residence fees, presses, etc.

b.) Have the people pay for education through private contributions so that the cost to the student is reduced.

c.) Have high tuitions but identify those students who are unable to pay and subsidize them. These subsidies would be either private or public and would have significant redistributive effects.

d.) Place the burden of payment on the student and his family. This would necessitate perfecting the capital markets for loans so that payments could be extended over longer periods of time.

The costliest form of student aid from the government budget standpoint are grants directly financed out of the budget. Subsidized loans out of the budget come next, having the same immediate budget impact but generating budget dollars in future years as loan repayments are made. Unsubsidized loans out of the government budget have a low cost, although still a positive one if the discount rate applied to future Treasury receipts (student repayments) is higher than the commercial rate of interest on loans. Unsubsidized loans given by private lenders under some form of federal guarantee are the cheapest of all, the only budget charge being for administration and whatever small subsidy may support the guarantee.

It is useful to distinguish between two major dimensions of an aid program. The first is the size of funding offers, i.e. how much, in whatever form, is offered (potential) students of various descriptions in the way of financing. The second is the set of conditions attached to the funding offer, i.e. how much comes as a straight grant, how much as a loan repayable under specific terms, how much as a (subsidized) wage for work performed, etc. The rules should be such that (1) students will accept the specified funding if their enrolment depends on its availability, (2) the burdens placed on them and their families are "tolerable" by current social standards and (3) the above two requirements are fulfilled at the minimum possible budget costs.

Some analysts view rapid growth of student borrowing as alarming and some as encouraging.² The question of how much reliance should be put on student loans in the future has become one of the major policy questions in the debate over financing higher education. Should student loans become a major (or even the sole) mechanism to finance higher education? Or, are we already burdening students with too much debt? What should be the role of the federal government in the student loan market? Should it continue existing programs? Should it facilitate the flow of capital to student loans by establishing federal lending

²See Milton Friedman, "The Higher Schooling in America," in The Public Interest (Spring 1968) 108.

authority or providing a secondary market for student loan paper? Should it increase subsidies to lenders or to borrowers or should it reduce them?

A number of possible funding roles for loans are possible. These include:³

1. Full Cost

One possible role for loans in higher education is that they support the entire cost of instruction. The implications of this role are that government support would wither, and that the college and university system would become entirely market-oriented. Those who see no social benefits stemming from higher education would find this standard attractive.

Even if some subsidy for higher education were envisioned, a full-cost loan program with subsidized loans could be the answer. The appeal of full-cost loan programs to those who would take this more moderate view would again be the creation of a market-oriented higher education system.

2. Total Student Charges

Tuition and student fees represent about one-sixth of total instructional cost. In addition, students are charged for a large share of the costs of auxiliary services associated with higher education: residence fees, books,

³See R. W. Hartman, Public Policy for Higher Education Student Loans (Washington, Brookings Institute, 1970).

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etc. Financing the total of student charges for all these activities provides another possible role for student loan programs. Under the full student charges standard, government and private subsidies would continue, but the loan program would be ready to accommodate each student up to his costs of tuition, fees, room and board. This standard for loans might appeal to those who accept the principles underlying present government and private subsidies, but who would like to see the financial barriers created by student charges hurdled primarily through loans. This approach implicitly assumes that existing subsidies (the gap between full cost and student charges) are about right and that remaining charges result primarily in private benefits to the student.

3. Student Charges Net of Family Ability to Pay

All charges above "equitable" parental contributions for which the student is liable would be available through loans, rather than the present system of grants, accumulated student savings, and extra parental contributions. Moreover, no student whose parents are willing to accept the responsibility of contributing a "fair" amount need face any further financial barrier.

4. Status Quo

Those supporting this view are those who would rather see no loans at all, but accept the current levels in the absence of preferable alternatives.

5. Accessory Aid Through Loans

A final standard which is philosophically apart from the above envisions student loans as a residual item in the overall finance scheme. The rationale for the total financing picture would run like this: Society's interests can be best served if the community provides the resources for a minimum or basic amount of higher education for all through direct grants to schools or to needy students. For those students who wish more than the minimum, a loan program should exist to finance charges above this basic amount.

CHAPTER III

A. Existing or Proposed Financing Schemes

A number of schemes exist or have been proposed to finance post-secondary education. A few of the major ones are reviewed in this section and their impact analyzed.

Present loan programs limit the length of the repayment term to a maximum of 10 years. There are two major criticisms of this practice, one theoretical and one practical. If loan repayments are restricted to a period of time less than the period during which returns accrue, the investment criterion will prove stiff. The student-borrower, for example, will have to justify the costs of borrowing out of his first 10 years of post-graduate income, rather than out of the stream of income of human capital which flows for, say, a 40-year period. To the extent that short-term repayment requirements on student loans impose this kind of penalty, while other forms of investment are not so penalized, one would expect to find relative under-investment in higher education.

B. Contingent Repayment Schemes

The contingent repayment loan scheme is basically a variation of the guaranteed loan system. The student does not obligate himself to repay the full amount of his loan at some fixed interest rate and time horizon but rather, signs a contract to repay a certain percentage of his

income in the future. The implication to the borrower is that if he is unsuccessful he will not be straddled with very high debt payments, while the successful student pays at relatively higher rates.

To the lender, the relatively higher dividends from successful borrowers offset the lower dividends from unsuccessful borrowers, leaving a satisfactory net profit on the operation. The following are actual proposals for the adoption of such schemes.

1. Educational Opportunity Bank (EOB)

While the contingent repayment scheme is a fairly old idea, originating 17 years ago in the United States with Milton Friedman, the idea regained prominence in 1967 when it was recommended by the President's Science Advisory Committee headed by Professor Zacharias. The panel's report stated:

The Panel recommends establishment of a bank, which might be called the Educational Opportunity Bank (Ed Op Bank), as an agency of the Federal Government. In order to obtain funds, the bank should be authorized to borrow money at going Government rates. It should be authorized to lend money to post-secondary students, regardless of the student's resources. A student should be able to borrow enough money to cover his tuition, costs, and subsistence at whatever college, university, or other post-secondary institution he is

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admitted to. The Bank would recoup these loans through annual payments collected in conjunction with the borrower's future income tax. At the time a loan was granted, the borrower would pledge a percentage of his future income for a fixed number of years after graduation. The Panel recommends that the number of years for repayment be 30, or perhaps 40, years. This period would be a fixed term for all borrowers. The percentage of income pledged would be proportional to the amount borrowed. Preliminary estimates are that the Bank could be self-sustaining if it charged borrowers 1 per cent of gross income over 30 years for each \$3,000 borrowed.¹

The main advantages of such a scheme over the existing guaranteed loan program are perceived as follows:

- a.) No borrower need restrict his investment in education out of worry about a large debt which he could not repay. This should encourage students to borrow and reduce income barriers to attendance at college.
- b.) By extending repayment periods to 30 or 40 years instead of the present typical 10 years, the students may borrow much larger sums for their education.

¹Educational Opportunity Bank, a report of the Panel on Educational Innovation to the United States Commissioner of Education, Director of the National Science Foundation, and Special Assistant to the President for Science and Technology (Washington, D. C., United States Government Publications Office, August, 1967). -

- c.) The availability of the loans is not directly affected by the state of the money market.
- d.) The plan makes young people more responsible for their own education, as they have borrowed against their future incomes and have not relied on the largess of parents or society.
- e.) Large government programs are most easily administered when there is no need for discrimination among recipients.
- f.) If this program became popular and a substantial portion of education were paid for by tuition and subsistence charges, then the flexible funds of private foundations could be used in more innovative ways in education.

There are also a number of disadvantages to this plan and they can be summarized in the following comments:

- a.) Students with high income prospects, or with parents of high income, will tend not to use the plan, since they can tap other sources, including the banks, for funds. Thus the children of low-income earners will be most dependent on this plan, and it may not become self-sufficient.
- b.) Social and political pressure could be brought to bear upon students, by refusing them lending privileges.
- c.) Large increase in fees could occur.
- d.) Women would be carrying a negative dowry into

marriage.

e.) Funding the program could be a problem. The Panel suggested a cost of \$1 billion for the first year of operation in the United States.

The redistribution aspects of the Educational Opportunity Bank also seem attractive. Speculations by Hansen and Weisbrod² follow the trend below:

- a.) A full-cost Educational Opportunity Bank will shift costs from state and local taxpayers to federal taxpayers and to Bank borrowers.
- b.) Since Bank borrowers are now--and will likely in the future continue to be--richer than the taxpaying population in general, financial support is shifted to a group with greater "ability-to-pay".
- c.) The state-local tax system is regressive, especially at lower incomes. Thus, the lesser reliance on state-local taxpayers is twice-blessed: not only is this group poorer than Bank borrowers, but the poorer members of the group are presently more heavily taxed. The lesser reliance on state institutions may be thrice-blessed, if, as Hansen and Weisbrod contend, the subsidies granted by state institutions are absolutely larger for wealthier college students than for poorer ones, (although wealthier borrowers may borrow more from the Bank and

² See W. Lee Hansen and Burton A. Weisbrod, Benefits, Costs, Finance of Public Higher Education (Markham Publishing Company, 1969), 75.

thus receive larger absolute subsidies from the federal government.)

d.) The federal taxpayer picks up part of the burden yielded by state and local taxpayers. Since the federal tax system is progressive, an additional argument can be made for the Bank's conformity with ability-to-pay doctrine. (This would, of course, hold for any shift in financing from state and local revenues to federal.)

e.) Most of the reduction in reliance on state and local taxation would be compensated for by an increase in taxes of Bank borrowers. We have already indicated that these borrowers in general are richer than state and local taxpayers.

2. Contingent Repayment Student Aid Plan (CORSAP)

Stemming from the Educational Opportunity Bank concept have come a number of proposals incorporating the contingent repayment idea. The main difference between these schemes and the EOB scheme is that the student cannot repay more than the amount he has borrowed plus interest. Again, the schemes are related to income and are repaid through an income tax program.

These schemes have been suggested in the context of student assistance plans rather than as replacements for government subsidies for the capital and operating costs of post-secondary institutions, but they could serve either

role. One such proposal, made by Stager and Cook, attempts to improve on the EOB by recommending alternatives to the major drawbacks of EOB such as: (a) an opt-out rate to attract high-income earners; this would represent an upper limit of payment based on principal and some pre-determined interest rate, and (b) an equitable treatment of women earners.

The major recommendations put forward by the plan are:

- a.) The provincial government should establish an agency authorized to raise capital through an issue of bonds guaranteed by the provincial government.
- b.) This agency should establish a fund from which it makes advances to an amount equal to tuition fees and either a living allowance, or a stipend to match estimated average foregone earnings, to academically qualified students in attendance and making satisfactory progress toward a degree at an accredited post-secondary institution. The terms of the agreement should specify a repayment period, and an income level to be used in determining the repayment rate for married women not participating in the labour force.
- c.) Upon graduation, or termination of attendance at a post-secondary educational institution, the borrower begins to make annual repayments. Such repayment period terminates, or the sum of all

repayments is sufficient to retire the borrowed principal, with interest compounded annually at a specified opt-out interest rate.

d.) If a participant in the scheme decides to emigrate to a country with which there is no tax treaty providing for mutual collection of such taxes, he should have the option of paying the remaining obligation in a lump sum, or authorizing the fund to transfer the remaining obligation to a private collection agency, or entering an agreement to continue repayments independently on the basis of declarations of income filed annually.

e.) The fund would employ the flow of repayments and any necessary additional borrowing to finance its current outlays. The charges for debt service could be met either from the fund's borrowing or through a subsidy from the provincial revenue.

f.) The fund may also administer, if desired, a program of grants allocated on the basis of demonstrated need and calling for no repayments.

g.) The transition from the present level of loans and grants to a level meeting tuition plus an allowance for living costs and foregone earnings may be accomplished relatively rapidly if the principle of repayment of all such support is accepted.³

³Cook and Stager, Student Financial Assistance Plans.

The main advantages of the contingent repayment scheme are similar to those of the EOB. The sizable loans which would be made to those who qualify will enable more of a cross-section of youths to attend the university, provide a wider choice of universities and reduce the economic burden placed on parents (and taxpayers) of college-aged children. A number of difficulties exist which include:

- a.) establishing in advance a system of earnings--surcharge rates which would return a specified yield on an investment, given the uncertainty associated with projecting future relationships between education and earnings;
- b.) determining repayment terms for women who marry but do not enter the labour force;
- c.) avoiding the publishing of repayment terms according to field and level of future earnings and hence the skewing of demand;
- d.) preventing the high initial costs of such a program generating inflationary pressures;
- e.) perpetuating existing government supported programs at the university.

2.1 O'Sullivan and Gordon Proposal for Student Financial Assistance⁴

This plan is a variant of the plan proposed by Cook and Stager and was made to the Council of Ministers of Education of Canada. The attempt was to formulate a plan which was national in scope, applied uniformly to all students, conformed to the generally accepted rules of equity and justice, facilitated the mobility of Canadian students in Canada and strived for the greatest simplicity of operation while distributing the available public funds to those students who were in greatest need.

Formally, the terms of the proposal were outlined in the following points:

- 1.) Initially, public financial assistance to the students will be in the form of an interest-bearing loan.
- 2.) The student is responsible for paying back the total amount of his borrowing plus the accumulative annual interest.
- 3.) The amount of the annual repayment will be the factor of the recipient's taxable income.
- 4.) Annual repayments are concluded in two ways:
 - i.) When the total debt, including interest, is fully paid, or

⁴ Summary of a Proposal for a New Program of Financial Assistance to Students; Subcommittee on New Approaches to Student Assistance, Post-Secondary Education Committee, Council of Ministers of Education, Canada. Mimeo, November 1969

ii.) After the payment of fifteen annual instalments.

5.) The loans will bear interest from the date of issue at prevailing "rates".

6.) Loans will be granted to cover all approved educational costs.

7.) Every applicant must satisfy the criteria of needs assessment.

8.) All post-secondary students, both full-time and part-time, will be eligible to apply for assistance under this program.

Perhaps the greatest departure from the Cook and Stager proposal comes in criterion seven--that every applicant must satisfy a needs assessment. This stipulation is perhaps needlessly restrictive as all loans will be interest-bearing and the interest charge will be at prevailing market rates.

The advantages to this scheme are twofold:

1. the amount of the loan fund required to set up such a program will be minimized, and
2. it guards against students from rich families obtaining favourable repayment terms.

Counter balancing these advantages is the requirement that every applicant must satisfy the criteria of a needs assessment. Certainly, this negates the concept that the plan should apply uniformly to all students enrolled in

programs of post-secondary education. It seems unrealistic that the amount of money granted to a student should depend on his parental background. Similarly, little consideration seems to have been made to married students and the female borrowers who do not work after graduation.

The maximum fifteen year term of repayment seems unrealistically short. It certainly limits the amount of money the student can borrow while going to school which he can hope to repay at some reasonable rate of expenditure upon graduation. Such a restriction would preclude any considerations of the students' paying anything near full cost tuition. In fact, it seems unlikely that a much greater portion of the educational burden could be placed on the student.

The discussion on the source of funds is perhaps one of the most important considerations in any student assistance program. It is important that capital markets be established in such a way that students are guaranteed a constant and reliable source of funds. The following considerations in terms of funding have been suggested by this plan.

1. It is hoped that this program will be financed by and through the Federal Government.
2. The lenders will be paid directly by the Government.
3. Repayment to the Government by the borrower is absolutely independent of the reimbursement of the lender by the Government.

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4. The annual net cost to the Government is the difference between the amount paid by the Government to the lenders and the repayment received by the Government from the borrowers in the same year.

This funding proposal differs from that of Cook and Stager in that a federal source of funds is to be established as opposed to a provincial source of funds. There is an implicit danger of federal control in a constitutionally provincial matter. It seems unlikely that the provincial government would give up control of these funds without ensuring some safeguard as to their own autonomy.

There are two final criteria for the administration of these programs; they are defined below:

1. It is assumed that the machinery established for the Canada Student Loans Plan may be adapted to encompass the administration of awarding loans in this program.
2. The agent of collection should be the Minister of Revenue.

The selection of the Minister of Revenue as the agent of collection is a reasonable one. It ensures, in some measure, that the program is national in scope and facilitates mobility of Canadian students within Canada. If the fund were provincially established, then the liaison between the collection of provincial debts through federal channels would have to be worked out.

Overall, the plan seems to have drawbacks in several areas:

1. It ties a student's borrowing abilities to his family background.
 2. It treats full-time and part-time students differently.
 3. Insufficient consideration is given to married students and to the problem of females who do not work after graduation.
 4. The limitations imposed on the amount of funds which can be borrowed because of a 15-year repayment term are not clearly specified.
 5. The establishment of a federal fund in a provincial jurisdiction is not clearly outlined.
 6. If a provincial fund were established then the liaison between the creation of debts to the provincial government and the collection through the federal government would have to be more clearly outlined.
3. Insured, Fixed Obligations Loan Program⁵

Among the cheapest forms of financial aid to a student is a guaranteed loan program administered by commercial banks. Taking the original version of the Federal Guaranteed Loan Program as an example, the major features of an insured, fixed obligation loan program are:

⁵ See R.A. Wolk, Alternative Methods of Federal Funding for Higher Education, Carnegie Commission on Higher Education, California, 1968

- a.) Full interest subsidy while the borrower is a full-time student.
- b.) Fixed interest subsidy in post-school years deducted from the regulated commercial rate charged by the lending institution.
- c.) A "commercial" repayment schedule covering up to 10 years without any reference to actual future incomes.
- d.) An insurance fee paid as an added interest charge.

Under the version of the Federal Guaranteed Loan Program in effect during 1968-69, interest subsidization was limited to students whose adjusted family income is less than \$15,000.

4. Guaranteed Student Loans: National Defense Education Act (NDEA)⁶

In 1958 Congress passed the National Defense Education Act. This piece of legislation recognized that improvement of education was a worthy national goal in itself. Along with various types of aid to secondary schools the NDEA provided for undergraduate student loans and graduate fellowships and loans. The Act authorized the federal government to put up \$.90 of every dollar loaned with the institutions contributing the other \$.10. An individual could borrow \$1,000 a year up to a maximum of \$5,000. The interest rate was at 3 per cent accruing 9 months after the student left college. The loans included forgiveness features for students entering teaching professions. The term of the loan was for 10 years.

⁶Ibid

Calculation on a principal of \$1,000 in the first year and an interest rate of 6 per cent indicates a subsidy of about 30 per cent on a freshman loan with repayment beginning five years after the loan is made. Of this subsidy, approximately half is in reduced interest rate and half in the delay of the repayment period.

For those graduates who become teachers there is a specific forgiveness feature. For each year of teaching 10 per cent of the principle (and hence interest) is cancelled, up to one-half of the total principle. In districts with predominantly low-income families the forgiveness is increased to 15 per cent of the principle per year and up to 100 per cent of the loan.

The major features of NDEA loans are:

- a.) Full interest subsidy while the borrower is a full-time student.
- b.) Interest subsidy on post-school years that brings the effective interest rate charged down to a pre-determined level.
- c.) A repayment schedule covering 10 years, without any reference to actual future incomes.
- d.) A yearly cancellation provision for borrowers employed as full-time teachers.

5. The National Student Loan Bank⁷

The National Student Loan Bank, like the Educational Opportunity Grant (EOG) scheme, was recommended by the U.S. Department of Health, Education, and Welfare in January of 1969. Its purpose was to supplement the EOG and existing federal loan and support programs such as NDEA. Further, it would provide, on a national basis, a stable source of funds to higher education established by Congress. Capital would be raised by the sale of securities that would be guaranteed against default by the federal government. Loans would be made at fixed interest rates over periods extending up to 30 years with provisions for flexible repayment schedules.

The fund would be available to each student in an eligible institution who would be allowed to borrow an annual sum not to exceed tuition and fees plus subsistence, minus federal aid received in the following forms:

- a.) Educational Opportunity Grants (EOG)
- b.) National Defense Education Act loans
- c.) federal fellowships or traineeships

Loans would be available for up to five years of undergraduate and five years of graduate study (or the equivalent in part-time study). At the end of the enrolment period the bank would consolidate all outstanding principle sums and arrange a contractual repayment schedule which provides for either:

⁷Toward a Long-Range Plan for Federal Financial Support for Higher Education, a report to the President by the U.S. Department of Health, Education, and Welfare (Washington D.C., 1969).

- a.) an equal sum to be repaid in each year, or
- b.) a schedule of rising repayments to be devised by the bank.

The choice of options is left to the borrower.

Collection would be effected through the Internal Revenue Service (IRS) through yearly or quarter-yearly payments based on the repayment agreement.

The cost to the government of operating the student loan bank would consist of all interest charges accrued during the enrolment period of each student borrower. The government would also be liable for any default, death and disability losses as well as any annual low earner cancellations.

The collection costs incurred by the Internal Revenue Service would be met from general revenues and the federal government would be required to provide start-up costs.

The repayment schedules on total loans of \$10,000 are indicated in Table 23 below, for loan periods of 30 and 15 years. The \$10,000 figure represents an average loan of \$2,500 over four undergraduate years.

Table 23

Repayment Obligations (30-year loan)				
	5 per cent	6 per cent	7 per cent	
Total Borrowed	\$10,000	\$10,000	\$10,000	
Annual repayment	650	726	806	
Approximate monthly repayment	54	60	67	
First year repayment on a 10-year loan where borrower pays 10 per cent of principal plus interest in first year				
	\$1,500	\$1,600	\$1,700	
For a \$10,000 loan, repayments based on a 15-year schedule of repayments are				
Repayment Obligations (15 years)				
	5 per cent	6 per cent	7 per cent	
Total borrowed	\$10,000	\$10,000	\$10,000	
Annual repayment	963	1,029	1,097	
Approximate monthly repayment	80	85	91	
Annual repayments for loans illustrated above would represent the percentages of various income levels				
Annual Repayment as a Per cent of Income (6 per cent loans)				
	Annual Income			
	\$5,000	\$7,500	\$10,000	\$15,000
30-year loan	14.5	9.7	7.3	4.8
15-year loan	20.6	13.7	10.3	6.9
10-year loan	32.0	21.3	16.0	10.7

Source: Department of Health, Education, and Welfare,
Toward a Long-Range Plan.

The need for a national student loan bank would become intensified if longer term and income contingent repayment schemes were adopted. In particular, the following two problems would arise:

1. If loan repayments were made to be contingent upon income, the collecting agency would need access to the borrowers' tax reports. It is not likely that such access could be, or should be, provided to lenders under either the National Defense Student Loan program or Guaranteed Loan Program as presently administered.
2. Lengthened repayment terms would exacerbate the difficulties already present in attracting loan funds to the guaranteed loan program as it presently operates. A longer repayment term would worsen the illiquidity of student loans as perceived by banks and collection costs would escalate to the lender as additional billings to mobile families would be required. Under these circumstances, the financing of a large-scale loan program would have to move beyond the narrow confines of commercial bank finance presently occupied by the Guaranteed Loan Program.

8

6. Educational Opportunity Grant⁸

The Educational Opportunity Grant was proposed in a report from the United States Department of Health, Education and Welfare in January of 1969. It was framed by the federal agency to dovetail with the National Student Loan Bank. The plan recommended that all students would be entitled to an annual sum equal to:

- a.) the national average college attendance cost, and
- b.) the family contribution plus expected student savings plus 10 per cent of effective family income.

The maximum annual grant would be limited to the lesser of:

- a.) \$1,500, or
- b.) tuition and fees plus a minimum maintenance allowance as determined by the Federal Commissioner of Education.

In any case, the minimum grant would be \$200. The definition of average costs, family contribution, expected student savings, and effective income are quoted below:

"National Average College Attendance Cost would be the average of undergraduate tuition, fees, room and board charges at institutions of higher education (public and private, 4-year, 2-year, and university), as determined by the Commissioner of Education. This sum would be recomputed every two years or at shorter

⁸Ibid

intervals if the Commissioner of Education determines this to be appropriate."

"Family Contribution would conform to standards established by the Commissioner of Education and would incorporate such factors as effective family income and number of dependent children. Guidelines for Family Contributions would be established annually under the supervision of the Commissioner. The Commissioner would determine whether students are self-supporting."

"Expected Student Savings would be such sum as the Commissioner of Education may determine accurately reflects the average student's expected savings from summer employment."

"Effective income would be the annual income (including non-cash benefits that the family may receive) minus; (a) federal income tax paid; and (b) special categories of expenses arising from unusual circumstances as defined in the guidelines as approved by the Commissioner of Education."

The following Table 24 indicates the size of grants which could be expected by effective family income and number of dependent children.

Table 24

ILLUSTRATIONS OF THE EOG PROGRAM
FOR 1, 2, 4, AND 6 CHILDREN FAMILIES

- National average college attendance cost = \$2,200
- Expected student savings = \$300
- College scholarship service criteria of adjusted effective income and expected family contribution are used for illustrative purposes

Effective Income	Opportunity Grant			
	One	Two	Four	Six
0	\$1,500	\$1,500	\$1,500	\$1,500
\$1,000	1,500	1,500	1,500	1,500
2,000	1,500	1,500	1,500	1,500
3,000	1,350	1,500	1,500	1,500
4,000	1,280	1,350	1,500	1,500
5,000	770	1,000	1,150	1,400
6,000	400	650	1,020	1,200
7,000	1200	310	730	910
8,000		2200	430	610
9,000			3200	320
9,800				200

- 1 \$200 grant at \$6,500 effective income
- 2 \$200 grant at \$7,300 effective income
- 3 \$200 grant at \$8,700 effective income

Source: Department of Health, Education and Welfare,
Toward a Long-Range Plan.

7. Auxiliary Student Support Schemes⁹

Although loan and grant programs provide the bulk of student aid in North America there are two lesser schemes which contribute to the students' (and parents') ability to finance higher education.

i.) Work-Study Programs

The United States Economic Opportunity Act of 1964 authorized expenditures to pay needy students from low income families for part-time work while enrolled in college. The federal government paid a large portion of the students' wages (first 90 per cent and then later cut back to 80 per cent). The requirements were modified to include not only students from low income families but also those who needed earnings to stay in college although preference was given to those from low income families.

The justification for the change relates to the question of how many could benefit from such a program. Low income family students constitute less than 10 per cent of the total number of students in need of earnings from part-time employment to pursue their studies.

There are a number of benefits and losses to a work study program, as indicated:

- a.) the subsidy apparently going to the student may in fact be a subsidy to the rest of the student body because the college can reduce costs at the expense of the student's time and the quality of his education.

⁹ See both *Toward a Long-Range Plan and Work, Alternative Methods*, 58.

- b.) there is a displacement of members of the regular work force given the number of jobs available. Such a displacement represents a loss which is proportional to the adverse reaction of the regular labour force;
- c.) there is creation of additional social product through the filling of jobs which would go begging in the absence of placement efforts, or the encouragement of productive activities which might not have been undertaken;
- d.) the introduction of subsidies to employers in hiring only students implies a discriminating device in their favour and definitely implies displacement of other members of the labour force.

There are approximately 400,000 students earning an average of \$450.00 per year under this program so it constitutes a sizeable educational expenditure.

ii.) Tax Subsidy Schemes

Unlike the direct monetary transfers in loan and grant programs, tax deduction or credit schemes are a more subtle form of financial support. A tax credit allows the taxpayer to deduct the amount from the taxes due while a deduction reduces the taxable income on which the tax rate is applied. The value of a deduction is defined as the product of the deduction and the marginal rate of tax of the taxpayer. The definition of the deduction must be outlined carefully, for if

the tax rate is progressive then:

- a.) the marginal tax rate is higher for richer people, and
- b.) increasing educational costs reduce the marginal rate and hence the amount of subsidy.

The effective subsidy to a family should not be limited to the amount of tax owed - if the subsidy would reduce the tax bill below zero then the net excess (or some portion thereof) should be paid to the family. This provision becomes very important in the case of tax relief to poorer families whose tax rates and liabilities are so low that neither credits nor deductions prove very helpful. One advantage of using the tax system is that the bookkeeping system is well defined and the costs would be minimized. Some disadvantages to the system are:

- a.) not all people file income tax returns and hence another bookkeeping procedure would be initiated for these people
- b.) the subsidy is not inversely proportional to income and hence more aid is given to richer rather than poorer families
- c.) the tax credit bill could benefit institutions more than students and parents if the institutions raised their tuition fees and captured the potential private saving

d.) in the United States such a plan would favour private institutions whose costs are higher and hence the subsidies would be greater

e.) tax relief proposals transfer control of now public funds to the hands of private individuals

f.) tax credit schemes have little impact to provide incentives to students to continue their education

One plan for tax relief¹⁰ which shares basic characteristics with others of the same spirit was offered by Senator Abraham Ribicoff and passed the United States Senate. The features of the plan were:

- a.) for taxpayers with incomes of \$25,000 or less the credit would be 75 per cent of the next \$300 and 10 per cent of the next \$1,000. No credit was to be given for amounts above \$1,500 so the maximum credit was \$325
- b.) taxpayers with incomes above \$25,000 would lose one dollar of credit for each \$100 of income above \$25,000.

The major defect of the Ribicoff proposal was that of not permitting the effective subsidy to exceed tax liability. This meant that it was of limited value to a lower income taxpayer and that the credit might be worth less than a credit given to a higher income taxpayer who actually spent less on education.

¹⁰Wolk, Alternative Methods, 58 and 233.

The major program in Ontario¹¹ combines the features of a grant and a loan program. The essential features of the OSAP program are as follows:

- a.) Any person enrolled in a full-time course of study at an eligible post-secondary institution in order to qualify for a degree, certificate or diploma is eligible to apply for assistance. All Canadian universities, other Ontario public post-secondary institutions and several private institutions are recognized for this program.
- b.) Students who are married, or who have completed four successful academic years, or who are 21 or over and have been employed for 12 months prior to enrolling, or who are 25 years of age or more, are classified as "independent of parental support."
- c.) To arrive at the financial assistance required, the financial resources the student is assumed to have on the basis of information provided in his application are subtracted from the educational costs specific to his course and institution. The difference is the total award made. The first \$150 of the award is a loan; of the next \$750 or less, 60 per cent is a loan and 40 per cent is a non-repayable grant; the balance, if any, is also a grant. Thus the maximum loan in one year is \$600.

¹¹See Cook and Stager, Student Financial Assistance Programs.

d.) The loans are interest-free until six months after graduation or withdrawal. The loans are arranged at any Canadian bank on the basis of a certificate of eligibility issued by the educational institution. Repayment must be made within ten years after graduation.

e.) Parents are expected to contribute to the students' costs in accordance with their levels of income and number of dependents. Students are expected to contribute a part of their summer earnings.

CHAPTER IV

A. The Tolerability of Loan Criteria¹

Many opponents of increasing the role of student loans in higher education finance have referred to the "burdensomeness" of large debt accumulations by young families. If there were some general consensus as to what level of debt is on the borderline between "acceptable" and "burdensome," public policy could be guided to establishing a maximum role for student loans. But there is no such consensus. What would command general agreement, however, is that the relevant measure of the oppressiveness of a debt is the relation between future repayments and future income.

All loan types stand between the following two limits:

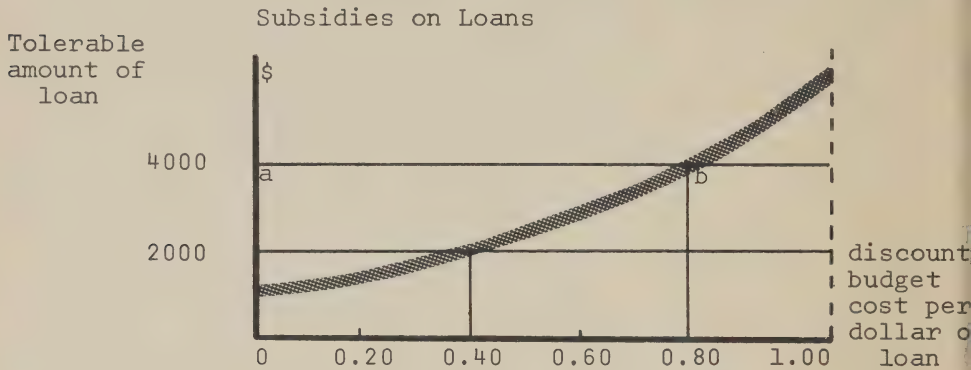
- a.) the strict "commercial loan," repaid at a competitive interest rate by the recipient. At the assumed budget discount rate, the budget cost of a "commercial loan" funded out of the federal budget is zero.
- b.) the outright grant, funded at no cost to the receiver but carrying a budget cost equal to the full amount of the grant.

Intermediate types divide the cost between the aid agency (as lender or subsidizer) and the student borrower.

¹See A.L. Daniere, The Benefits and Costs of Alternative Federal Programs of Financial Aid to College Students (Massachusetts, Institute of Human Sciences at Boston College, 1969)

For each loan type, the maximum amount which a student can take with tolerable repayment obligations can be specified:

Figure 1



Source: Daniere, Benefits and Costs

The curve above, describes increasing amounts of loan which the student will take (find tolerable) for increasing levels of subsidization translating into increasing budget costs per dollar of loan. The curve goes to infinity for totally subsidized loans (grants), and starts at a low but positive level for strict commercial loans.

In determining a "tolerable" level of loans for alternative loan programs, a social consensus of what constitutes tolerability must be referred to, rather than what individual students would view as such.

A "comfortable" repayment stream may be defined as one which:

a.) does not exceed a fixed proportion of "residual" income (income after tax minus "necessary" expenditures) in any year.

b.) does not begin until some time after termination of studies

c.) stretches to no more than a fixed number of years after termination of studies

Whether a given amount of loan will prove comfortable depends on:

a.) repayment obligations incurred

b.) shape of the future "residual" income stream

c.) future credit conditions available to the student

If repayment is to be made on the basis of expected income streams then there are two ways in which this repayment may be calculated in keeping with tolerability criteria:

a.) If loan obligations are unrelated to actual residual income received, then the amount of loan is calculated so that repayment will be "comfortable" in terms of a residual income stream less than the expected residual income stream (protection against risk of low income).

b.) If loan obligations are flexibly adjusted to actual residual income in any year, and if repayments can, in no case, continue more than five years beyond a "comfortable" period, the amount of loan is calculated so that repayment will be "comfortable" in terms of the expected residual income itself.

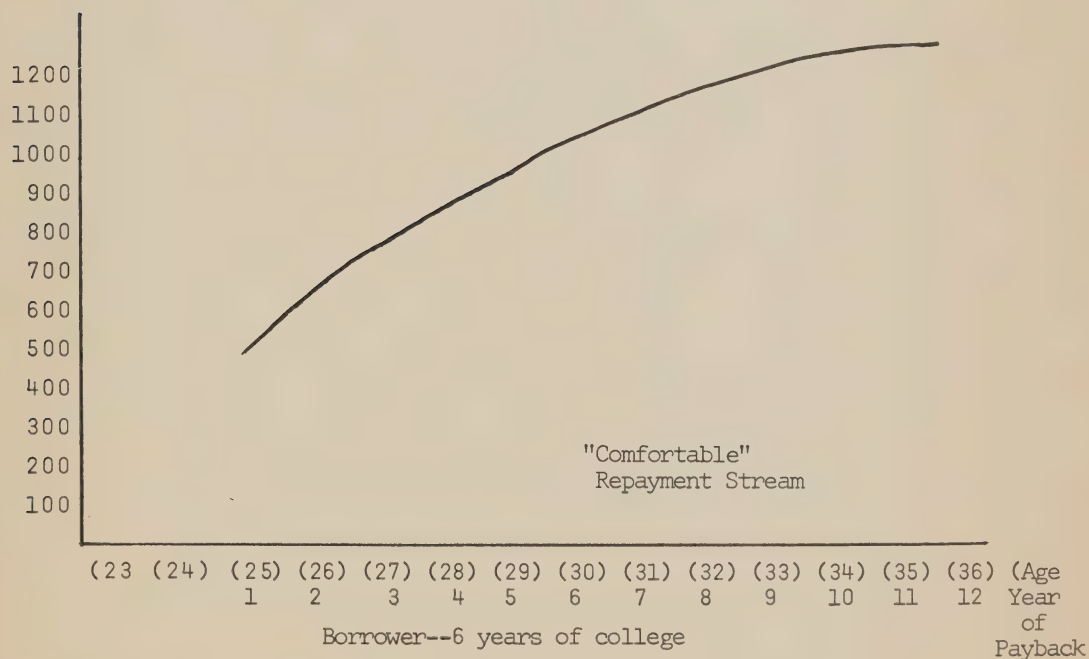
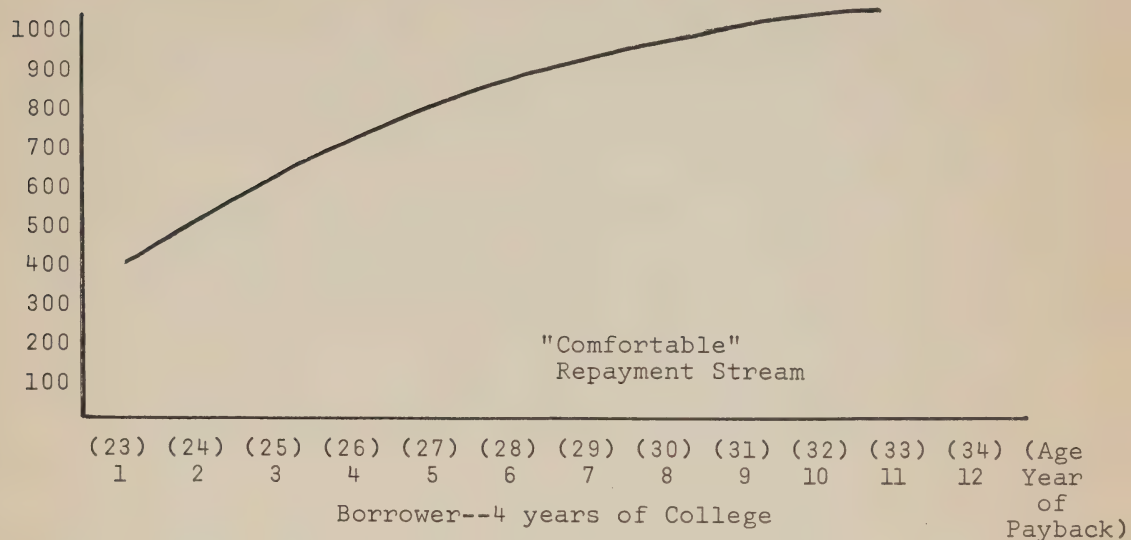
Two types of student may be considered - those who go for four continuous years and those who go for six continuous years. If we consider that part of the residual income should be available for securing life insurance, providing emergency funds etc. and that 90 per cent of after-tax income is used for consumption expenditure, then something less than 10 per cent can be set aside for loan repayment. Danieri suggests that this level be 7.5 per cent of after-tax income, which would allow for the establishment of the requisite emergency funds. Figure 2 indicates Danieri's calculations of comfortable repayment streams for those four and six year students who exactly completed their programs within the required times. The payback period is defined over ten years as most existing programs use this as the base payback period.

Given the maximum comfortable repayment stream, it is possible to determine what total level of loans could be amortized under varying assumptions as to repayment schedules, cancellation provisions, and degree of interest subsidy. Three loan program classes were considered.

1. Insured, fixed-obligation loan program, with repayment over ten-year period.
2. The current NDEA loan program
3. A program under which annual repayment is fixed at a given percentage of residual income per \$1,000 of loan.

Figure 2

MAXIMUM COLLEGE LOAN DEMAND
(Four Years of College and Six Years of College)



Source: Danieri, Benefits and Costs

For each of the alternative loan programs above, and for each class of borrowers (two year and six year continuous full-time study), a budget cost per \$1,000 of loan was derived, based on the following assumptions: (Table 25)

- a.) For computation purposes, the aggregate loan was assumed to be made in equal installments each school year, each installment being paid the student on September 31 at the beginning of the school year. Students were assumed to repay, on the average, in ten yearly installments, the first installment being paid exactly two years after the last loan installment is made (in the middle of the first "repayment year") and the nine remaining installments at one-year intervals.
- b.) The rate of discount on future budget dollars was set at the same level as the assumed commercial interest rate on loans, i.e. 6 per cent. The budget cost of a student's aggregate loan was computed in terms of budget dollars in the year of his entering college - since federal decisions concerning financial aid are generally considered in terms of entering freshman cohorts. The budget cost was simply computed at the discounted sum (6 per cent) of federal outpayments (loans or subsidies) minus student repayment to the U.S. Treasury.

Table 25

Discounted Cost of Loans to
Loan-Aid Agency per \$1000 of Loan

<u>Insured, Fixed Obligation Loan--10-year</u>	<u>4-year Borrower</u>	<u>6-year Borrower</u>
<u>Repayment</u>		
No interest subsidy	0	0
Interest subsidy while in full- time study and 0 subsidy in repayment period	126	162
1%	164	195
2%	200	228
3%	235	259
4%	269	290
5%	303	320
6%	335	348
<u>NDEA Loan Program</u>		
No cancellation	235	259
50% cancellation	634	
<u>Percent of Residual Income Repayment</u>		
No interest subsidy	0	0
Interest subsidy while in full-time study and 0 subsidy in repayment period	126	162
1%	168	199
2%	211	235
3%	253	271
4%	292	305
5%	328	338
6%	361	371

Source: Danieri, Benefits and Costs

Table 26

Maximum Tolerable Loans by Type of Loan
and Class of Borrower

Insured, Fixed Obligation Loan-- 10-year repayment		4-year Borrower		6-year Borrower
No interest subsidy interest subsidy while in full-time study and 0 subsidy in repayment period		\$2,800		\$3,470
		3,240		4,130
1%	"	3,330		4,310
2%	"	3,500		4,510
3%	"	3,660		4,690
4%	"	3,840		4,890
5%	"	4,000		5,100
6%	"	4,210		5,340
NDEA Loan Program				
No cancellation		3,660		4,690
50% cancellation		8,190		9,750
Percent of Residual Income Repayment	% After-tax Income Repay- ment per \$1000 of Loan		% After-tax Income Repay- ment per \$1000 of Loan	
No interest subsidy	1.78	4,200	1.41	5,620
interest subsidy while in full time study and 0 subsidy in repayment per.				
	1.55	4,800	1.15	6,690
1%	" 1.46	5,060	1.09	7,030
2%	" 1.38	5,320	1.03	7,350
3%	" 1.30	5,620	0.97	7,700
4%	" 1.22	5,920	0.91	8,090
5%	" 1.15	6,270	0.86	8,520
6%	" 1.08	6,600	0.82	8,920

Source: Danierie, Benefits and Costs

c.) Costs incurred on the Death, Disability, Bankruptcy account (amounting to less than \$2 per \$1,000 under NDEA) and, where relevant, costs of loan insurance (by whomever borne). In the percentage-of-residual-income repayment model, the cost incurred on the account of low-income borrowers benefiting from the repayment cut-off was also neglected.

d.) No provision for administrative costs was made, although it is recognized that such costs could vary significantly between programs used.

Computations in Table 25 concern only sets of interest subsidy between 0 and 6 per cent. There is no reason, in principle, why the subsidy should not exceed the rate of interest. This simply means that the subsidizing agency helps borrowers repay some of the principle over time.

Since four-year and six-year (graduate school) borrowers are not distinguishable at the start of their college career, the terms of "college" loans must be fixed by reference to "four-year" schedules of aid agency costs and tolerable amounts. Those going on to graduate school are allowed to consolidate both undergraduate and graduate loans under the "six-year" loan terms, and their eventual budget cost per \$1,000 of loan taken during college is that calculated under six-year loan terms.

An alternate evaluation has been formulated on costs by Hartman³ who has calculated the repayment schedules for loans of \$3,000 (assuming \$750 per year for four years) and \$9,000 (assuming \$1,500 per year for six years). The payback amounts corresponding to \$3,000 and \$9,000 debt levels at various terms and interest rates are depicted on the basis of a gross annual income of \$9,000. (See Table 27.)

Loan terms of 10 years and 20 years were employed for illustrative purposes, the former being representative of most present loan programs and the latter a rough mean of some recent proposals.

The interest rates represent the following perspectives. Three per cent is the current rate employed in the existing direct loan federal programs. Seven per cent is the repayment rate embodied in the guaranteed loan program legislation and was the rate most commonly charged in 1968-69. The guaranteed loan program, as we shall see later, has run into trouble attracting lenders at 7 per cent, even though the loans are insured by the federal government. Recent legislation allows up to a 10 per cent return to lenders.

The debt levels associated with annual repayment of \$1,350 are indicated in Table 28. This implies that 15 per cent of total income would be set aside and indicates the loan amounts available under more severe payback conditior

³Hartman, Public Policy, 45

Table 27

Annual Repayment of Student Loans: Debts Levels of \$3,000 and \$9,000

Debt of \$3,000								Debt of \$3,000							
10-year repayment								20-year repayment							
3 per cent		7 per cent	10 per cent	3 per cent	7 per cent	10 per cent	3 per cent	3 per cent		7 per cent	10 per cent	3 per cent	7 per cent	10 per cent	
Dollars	351.69	427.14	488.25	201.66	283.07	352.38	1,055.07	1,281.42	1,464.75	604.98	849.51	1,057.14			
Percent of income	3.9	4.7	5.4	2.2	3.1	3.9	11.7	14.2	16.3	6.7	9.4	11.7			
Income is \$9,000															

Source: Hartman, Public Policy

Table 28

Debt Levels Associated with Annual Repayment of \$1,350

Interest Rate Term (Years)	3 per cent			3 per cent			3 per cent		
	10	20	30	10	20	30	10	20	30
	11,516	20,085	26,461	9,482	14,302	16,752	8,295	11,493	12,726

Source: Hartman, Public Policy

The effects of a lengthened repayment term may be illustrated by referring to a typical college graduate with \$9,000 average annual income. Table 29 shows the annual income of such a graduate, rising from \$7,000 in the first post-graduate year to \$11,000 nine years later. For convenience, it is assumed that income peaks at \$12,000 in the eleventh year and thereafter. The college graduate has accumulated a \$4,000 debt during his college years through borrowing under a guaranteed loan program.

Although the repayment rate of this debt averages about 6 per cent of income over the life of the loan, this rate is exceeded in the first four years after graduation. If this prototype student had been sensitive to a repayment ceiling of 6 per cent, he would never have accumulated a debt of \$4,000. Even if he had, society might not want to saddle him with burdens in excess of the ceiling.

In the third and fifth columns of Table 29 we have shown how a lengthening of loan terms might make a \$4,000 debt "nonburdensome" by extending the repayment term to 16 years - while maintaining the 7 per cent interest rate. Constant annual payments of only \$423.43 are required and this repayment never exceeds 6 per cent of income.

The criteria of tolerability for loan programs indicate that if a student is not to endure "uncomfortable" repayment schedules on loans borrowed at commercial rates he must limit the amount of his loan or negotiate for longer

term loans or both. The limits on such amounts would certainly be a function of the occupational choice or program which the student had made and the percentage of discretionary or gross income he wished to allocate to repay educational debts.

From Daniere's analysis it would appear that approximately \$5,000 would be the maximum amount⁴ which the typical four year graduate could borrow, assuming 6 per cent charges, a ten year term, and no subsidy in the repayment period.

Hartman's analysis is somewhat more conservative,⁵ indicating that at 7 per cent and a ten year term with annual repayments within the tolerability criteria of 6 per cent of gross income, (at the \$9,000 per annum level) the maximum loan would be around \$4,500. It would appear then that the maximum unsubsidized loan which could be taken would amount to about \$1,000 for each of the undergraduate years.

⁴Daniere, Benefits and Costs

⁵Hartman, Public Policy

B. The Distribution of Benefits of Student Loans

This section examines the questions of who should and who does benefit from student loans in the United States. As noted in the first part, student loan programs may serve several objectives, and it is from these objectives that some measures of the benefits of loans can be derived.

A major benefit ascribed to existing loan programs is their ability to generate incremental enrollments. Frequently, the assumption is made that all borrowers under existing programs would not have enrolled were it not for the loans they obtained. Operating for the moment under this assumption, the program results for a recent year can be examined to see whose enrollment has been stimulated.

In Table 30, the first three columns report the distribution of all borrowers by the gross income of their families. These distributions give some indication of the different patterns of utilization in two programs, i.e. over 50 per cent of the borrowers in the NDSL program came from families with incomes below \$6,900, while only 17 per cent of GLP borrowers had incomes below that level. By contrast nearly two-thirds of the GLP borrowers' families had incomes as high. In column (4) of Table 30, we can see that the median borrower's family income was about \$8,000.

Table 30

Percent Distribution of Borrowers 1967-68

Gross Income	National Defense Student Loan Borrowers	Guaranteed Loan Program Borrowers	All Borrowers	All Borrowers As Percent of Students Enrolled In Own Income Class
(1)	(2)	(3)	(4)	(5)
\$ 0 - \$2,999	22.4	8.8	15.0	62.6
3,000 - 5,999	27.8	8.8	17.5	24.6
6,000 - 7,499	16.0	10.1	12.8	18.8
7,500 - 8,999	13.1	10.1	11.5	16.6
9,000 - 11,999	13.8	22.1	18.3	17.5
12,000 - 14,999	5.0	20.0	13.1	15.0
15,000 and over	1.9	20.3	11.9	9.8
Total	100.0	100.0	100.0	18.4

Source: Hartman, Public Policy

On the assumption that all borrowers' enrollment is attributable to the two loan programs, the fourth column of Table 31 summarizes the incidence of enrollment effects of the programs. According to these estimates, as much as 63 per cent of the lowest income groups' enrollment is attributable to the two loan programs. By contrast only 10 per cent of enrollment in the highest income category can be attributed to the joint action of both programs. In total, about 18 per cent of all students (full-time equivalents) "owe" their enrollment to these programs.

The reason for the dramatic decline in enrollment incidence as we move up the income ladder is twofold: first, the generally pro-poor incidence of loans, especially under the NDSL and secondly, the fact that the base number of students is so small in the lowest income classes and so large in the higher ones.

The incidence numbers give an upward bias to the picture of the two major loan programs, even accepting the assumption that all borrowers are not enrollers. The fact of the matter is that very few students from lower income classes are enrolled in college and while this situation is not the fault of the existing loan programs, it provides a standard against which to measure the loan programs' achievements. Table 31 has shown what the income profile of college students would have looked like if enrollment rates were the same in each income class

Table 31

Percent Distribution of Enrolment 1967-68

Gross Income	Distribution of Families: "Goal"	FTE Enrolment Actual "Gain from Loans"	FTE Enrolment Net of Borrowers "No Loans"
(1)	(2)	(3)	(4)
\$ 0 - \$2,999	10.7	4.4	2.0
3,000 - 5,999	23.0	13.0	11.9
6,000 - 7,499	13.0	12.5	12.4
7,5000 - 8,999	11.7	12.7	12.9
9,000 - 11,999	16.6	19.2	19.3
12,000 - 14,999	13.1	16.1	16.7
15,000 and over	11.9	22.4	24.7
Total	100.0	100.0	100.0

Source: Hartman, Public Policy

(i.e., if college students were distributed by income in the same way that families are). This is certainly an ambitious goal, but one not out of line with some of the rhetoric about equality in education. Tabulated against the family income distribution is an estimate of the distribution of college students if all student borrowers under NDSL and GLP were to have dropped out of school in 1967-68 (column 3 in Table 31). The actual distribution of college students is the final distribution shown (column 2).

Given our assumptions, the distances between these last two distributions represent the gain in enrollment equalization attributable to loan programs; the distance between the first and last columns is a measure of the "need" for equalization. It is evident that loan programs have made only a modest contribution toward the goal of equal enrollment rates.

Under these assumptions, we can distribute the "finance benefits" and the "subsidies" by income class of the students.

In Table 32 (column 2) the distribution of benefits that derive from having been provided with a new source of finance (the GLP) are shown for fiscal year 1968. This column shows the per cent distribution of the volume of loans in the GLP that year. The reader will notice that this distribution is more skewed toward upper income groups than the borrower distribution reported in Table 31. In

Table 32

DISTRIBUTION OF FINANCE BENEFITS AND SUBSIDIES
(PERCENT)

(1) Gross Income	(2) GLP	(3) NDSL	(4) Total	(5) <u>Subsidies *</u> 1967-68 1968-69	(6) <u>Subsidies *</u> 1967-68 1968-69	(7) Percent of College Students Fall 1967
\$ 0 - \$ 2,999	8.1	n.a.	13.1	13.2	14.8	4.4
3,000 - 5,999	8.1	n.a.	15.0	15.1	17.0	13.0
6,000 - 7,499	9.5	n.a.	11.8	11.9	12.5	12.5
7,500 - 8,900	9.5	n.a.	10.8	10.9	11.4	12.7
9,000 - 11,999	21.8	n.a.	19.0	19.1	18.6	19.2
12,000 - 14,999	20.8	n.a.	15.3	15.4	13.7	16.1
15,000 and over	22.3	n.a.	15.1	14.4	12.0	22.4
Percent	100.0	100.0	100.0	100.0	100.0	100.0
Totals (\$ Millions)	435.87	236.35	672.22	183.63	211.37	-

* Excludes teacher cancellation subsidies

Source: Hartman, Public Policy

1967-68, the average loan for those from families under \$3,000 was \$780, about \$150 less than the average loan in the highest income class; thus, loan volume is more concentrated in higher income classes than is number of borrowers.

Unfortunately, average loan data by income class are not available for the NDSL Program. In subsequent computations, we have therefore assumed that the average loan is the same in each NDSL borrower income class. Under this assumption, the total volume of GLP and NDSL loans is distributed by income class as shown in the third column of the table. Once again, greater benefits accrue to the lowest income class than would be expected if loans were distributed in accord with the distribution of the total college population. Outside of the lowest income class, very little redistribution of financial opportunity takes place. Of 100 students, 73 have incomes between \$3,000 - \$15,000; they get about 72 per cent of the loan volume, distributed approximately in proportion to enrollment.

When subsidies granted by the two programs are considered, the distribution of these subsidies is only minutely more concentrated on poorer families than the finance benefits. Using the subsidies implied by the 1967-68 rules of the loan programs, the distribution of subsidies is slightly more progressive ("pro-poor") than

the distribution of loan volume because of the prohibition on interest subsidies to students from families with over \$15,000 adjusted family income in the GLP. In 1967-68, the interest subsidy per dollar of loan in the two programs was the same - no interest during enrollment, 3 per cent during repayment.

In 1968-69, two significant changes took place in the loan programs. First, the subsidy per dollar of loan in the GLP was significantly reduced by the stipulation that students pay all interest (raised to 7 per cent maximum during 1968-69) during repayment period. Secondly, in 1968-69, the rate of growth in the volume of GLP loans exceeded 50 per cent, while the NDSL expanded at a more modest 12 per cent. These two trends have opposing implications for distribution: the reduction in the GLP subsidy rate increases the share of the lowest income groups in the subsidy total, while the lesser growth in the NDSL program reduces the poor's subsidy share.

The impact of these changes on the distribution of subsidies is shown in Table 32. The reduced subsidy in the GLP dominated the scene and there was a small, but noticeable, shift in subsidy distribution toward the lower end of the income distribution.

When all is said and done about the distribution of subsidies implicit in the U.S. federal loans programs, it amounts to this:

a.) About 30 per cent of the subsidies - (\$52 million in 1967-68 and \$67 million in 1968-69) - flow to students from families below \$6,000 in income. This share is much higher than the incidence of such groups in the college population, but not much different from the incidence of such families in the population.

b.) Only about 12-14 per cent of the subsidies - (over \$25 million in 1967-68 and 1968-69) - flows to students from families with incomes above \$15,000, well below that group's share of all college students, but not much different from that group's share of the population.

c.) The 60 per cent of all college students whose family income lies between \$6,000 and \$15,000 receive about 57 per cent of the subsidies: \$105 million in 1967-68 and \$119 million in 1968-69. There is no significant redistribution within this range: the grants could just as well have been dropped from airplanes over college campuses.

Neither assumption so far reviewed - that all borrowers are induced enrollees or that no borrowers are induced to enroll by loan programs - is likely to be true. The benefits of these programs are a mixture of enrollment and finance-subsidy effects. The mixture is dependent upon the effects of pure loans and subsidies on college attendance rates and on expenditures for higher education.

This section has described the distribution of potential benefits of existing loan programs. From a public policy point of view, it is important for government decision-makers to supply their own valuations to (a) who gets the benefits and (b) the type of benefits.

But more than half of the benefits of loan programs accrue to students from families with over \$7,500 income. These benefits are partly in the form of providing access to capital markets and a good case can be made for creating such access for all income classes. But the greater accessibility to capital markets was accompanied in 1968-69 by over \$100 million in subsidies to students whose incomes exceeded \$7,500. Such subsidies cannot be defended on egalitarian grounds; they have nothing to do with capital market accessibility; and they produce inequities when viewed as forms of general subsidy to higher education.

Federal grant and work-study programs are even more highly targeted. NDSL should be thought of as competing with these programs for the enrollment rate equalization objective. In 1967-68, the distribution of recipients in the Educational Opportunity Grant (EOG) and College Work-Study (CWS) programs was as follows:

Table 33

Gross Income	EOG	CWS
\$ 0 - 3,000	28 %	28 %
3,000 - 5,999	40	33
6,000 - 7,499	17	16
7,500 - 9,000	10	11
9,000 and over	5	13

Source: Fiscal Operations Reports, Office of
Education, Division of Student Financial
Aid

In order to give special aid to lower income students, a subsidized and targeted loan program probably has a role to play. There is, however, no evidence that the current rate of subsidy of NDSL is adequate (or overly generous), nor has it been established that a subsidized loan is preferable to a straight grant for equalizing purposes. An even higher concentration of the funds to low-income students would clearly establish NDSL as an enrollment-equalizing program.

There is reason for the federal government to maintain a program to provide access to capital markets to all students. This can be accomplished easily through guarantees of private loans as in GLP. There being no good reason for the federal government to control who

gets such loans, the private market (as opposed to a direct loan) approach seems sensible. But such loans should be completely unsubsidized. Under these conditions, a program such as GLP would be a proper instrument for carrying out a public objective.

General subsidies to higher education by the federal government may be warranted. If so, a new instrument of public policy is necessary: one which spreads the benefits more or less universally among college students. In no way do existing loan programs meet this requirement and since "willingness to borrow" is never likely to correspond to "warrant a public subsidy," no loan program is likely ever to be a suitable vehicle for general subsidies. General student grants, institutional grants based on enrollment, federal support of two years of college are all possible routes to general subsidy.

CHAPTER V

A. Implication of Alternative Methods of Financing

The previous sections of this report outline some of the proposals which have been forwarded as alternatives to financing post-secondary education. Their presentation is in the context of defining how they operate and their limitations. Loan schemes have predominated. The orientation towards loan schemes is a concession to American influence where these schemes play a much more significant role. Their private higher education sector is much larger and the orientation is towards finding means of ensuring that this sector (and hence prestigious universities such as Harvard, Yale, Stanford etc.) continue. In Canada and particularly in Ontario, the problem of private post-secondary education plays a much smaller role.

It is generally conceded that benefits accrue both to the private individual and to society through post-secondary training. The only question lies in how much should society pay and how much of the cost should be borne by the student or his family. This question touches on many relevant issues, such as the relative allocation of benefits, and the political objectives and trade-offs. But operationally, the question reduces to a compromise based on:

- a.) how much can the student afford to pay?
- b.) how much can society afford to pay?
- c.) how much is either willing to pay?

The question of how much the student can afford to pay has been touched on in the section on tolerability criteria of loans (Chapter IV). Some levels, or measures, of tolerability have been suggested by Daniere and Hartman. The indications appear to be that the student cannot afford to completely pay for his education without suffering some financial hardships (i.e., the loan amounts which could comfortably be tolerated lie well below the full costs of post-secondary education).

The question of how much society can afford to pay is confounded with the issue of relative allocation of resources among competing public sectors. Only the question of what the expected costs are under various conditions is readily amenable to analysis.

1. The Effects of American Loan Programs

The way in which a program is viewed may drastically alter the perceptions about such a program. This section compares the two largest American loan programs, the National Defense Student Loan (NDSL) and the Guaranteed Loan Program (GLP). (The NDSL has also previously been referred to as NDEA, National Defense Education Act Loans.) Both programs involve a maximum ten-year repayment term once the repayment period begins.

Table 34

FISCAL YEARS 1968 and 1969, PROGRAM INFORMATION: NDSL AND GLP

	NDSL		GLP	
	<u>1968</u>	<u>1969</u>	<u>1968</u>	<u>1969</u>
Number of Borrowers	429,000	442,000	585,408	787,000
Annual Loan Volume (\$ Millions)	233.7	265.1	435.8	687.0
Borrowers' Interest Rate During Enrollment, Military (Percent)	0	0	0	0
Borrowers' Interest Rate During Repayment (Percent)	3	3	3	7
Interest Return to Lender (Percent)	6*	7*	6	7
Other Benefits Teacher Cancellation (\$ Millions)	20.3	NA	0	0

* NDSL is a direct loan program. The ultimate lender cannot be determined. We use the interest rate for the private GLP as a measure of the foregone interest in this program.

Source: Budget of the U.S. and Budget Justifications, U.S. Department of Health, Education and Welfare.

Hartman, Public Policy

Table 35

FEDERAL BUDGET INFORMATION: NDSL AND GLP
FISCAL YEARS 1968-69

	<u>1968</u>	<u>1969</u>
<u>NDSL</u>		
Federal Capital Contributions (\$ Millions)	178.4	190.0
Reimbursements for Teacher Cancellations (\$ Millions)	1.7	1.4
Total Federal Budget (\$ Millions)	180.1	191.4
"Budget cost per dollor of loan" (\$)	.77	.72
"Budget cost per borrower" (\$)	420.	433.
<u>GLP</u>		
Advances for Reserve Funds (\$ Millions)	7.9	4.7
Interest Payments (\$ Millions)	32.0	65.0
Total Federal Budget (\$ Millions)	39.9	69.7
"Budget cost per dollar of loan" (\$)	.09	.10
"Budget cost per borrower" (\$)	77.	89.

Source: Hartman, Public Policy

The contrast in lessons to be learned from Tables 34 and 35 is striking. In Table 34, we see that in fiscal 1968 the GLP encouraged almost twice as many dollars into student loans as the NDSL program. But the federal budget makes the latter program look 4-1/2 times bigger than the former in that year. The NDSL program loan volume increased about \$30 million, or 14 per cent between the two years; but the federal budget shows only a \$10 million, or 6 per cent, increase between the years. For the GLP, the annual growth of new loan volume was 34 per cent; budget costs for that program increased even faster, rising 75 per cent. These discrepancies between the actual relative sizes and growth rates of the two programs and their budgetary levels and changes stem from one factor. That factor is the "age" or state of maturity of the programs. At some later date in the programs' lives the federal budget will show much larger charges for GLP than NDSL.

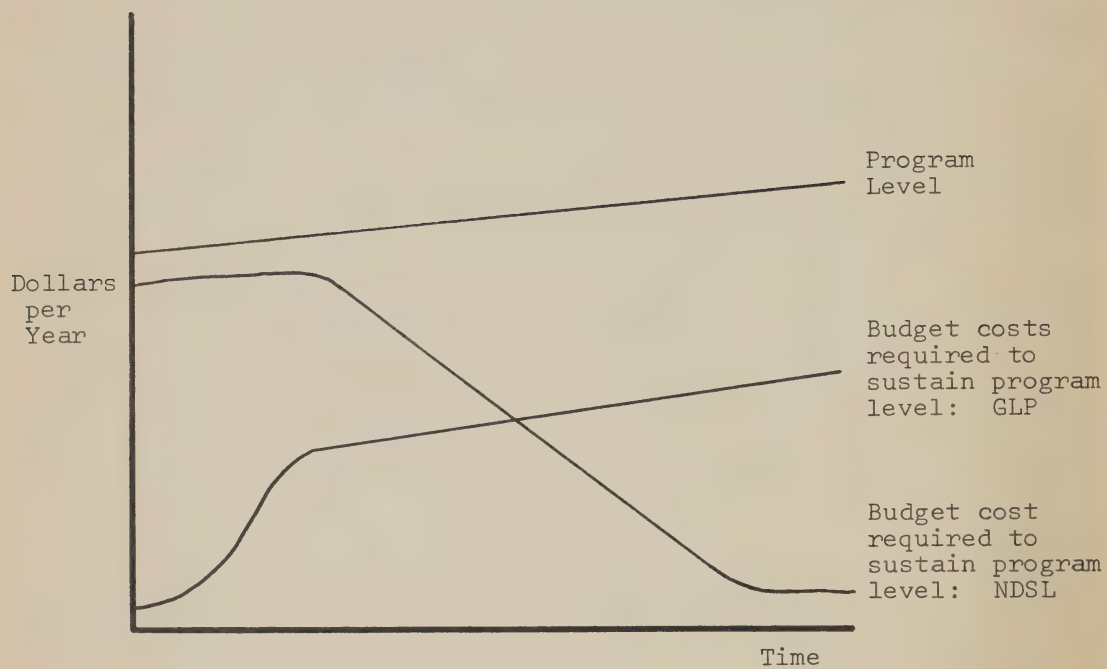
Each program's budget level in relation to program (new loan volume) level will evolve differently. In the early stages of the NDSL program, federal capital contributions must be maintained at a high level relative to new loan volume to sustain that loan volume. At a later stage, as repayments mount, annual federal budget reductions are compatible with a growing loan volume, as the repayments supply the

loan principle required. At "maturity" in a modestly growing NDSL program, federal budget contributions will become very small, limited to supplying a part of the annual growth in the program, as the revolving fund of repayments and interest carry the major burden of finance. In contrast, in a modestly growing interest-subsidy program of the GLP type, early years involve very small interest charges. But as the volume of outstanding loans grows, so do the interest costs. The growth in interest payments in this program levels off as repayments reduce the amount of outstanding loans. Figure 3 illustrates these trends for a direct and interest-subsidy program of common program levels. In both cases, it is assumed that 1967-68 rules govern and that defaults and teacher cancellations are nil.

By 1968-69, the program volume had grown to \$952 million. Of this total, interest subsidies represented \$211 million. In the GLP the interest subsidy is entirely accounted for by the absence of any interest charge during enrollment, military service, etc., while in NDSL the subsidy attributable to low interest during repayment also persists. As interest rates rose from 1967-68, the subsidy value of the constant terms of the NDSL increased. Between 1967-68 and 1968-69 the net result is that the subsidy implicit in the NDSL increased both per dollar of loan and in the

Figure 3

RELATIVE DOLLAR OUTLAYS REQUIRED OVER TIME BY
GLP AND NDSL PROGRAMS



Source: Hartman, Public Policy

aggregate, while the implicit subsidy of the GLP was significantly reduced per dollar of loan (although it is still substantial) but rose slightly in the aggregate.

The implications of the above indicate that there are real differences between the two programs. In the long run it appears that the money required to sustain the NDSL would be much smaller than that required to sustain the GLP. It is not clear that the total dollar outlay for NDSL would be less than for GLP.

It seems likely that heavy reliance will continue to be placed on the GLP. It has a very low budget cost per dollar of loan and is more in keeping with the prevailing philosophy of passing more of the educational costs on to the student.

2. Contingent Repayment Assistance Schemes

A number of income-related loan schemes have been suggested and their qualitative attributes discussed. The financial implications of such plans have not thoroughly been investigated. A study by Stager and Cook¹ tested the implications of such a tax scheme which offers a method of eliminating the financial barriers to post-secondary education and yet distributing the burden of finance among those who benefit monetarily from that education.

¹Cook and Stager, Student Financial Assistance Programs

A number of simulations were performed using the assumptions of a 4 per cent growth rate of income, a 5 per cent growth rate of costs, a 30-year repayment period and a minimum income of \$4,000 for non-working married women. All enrolled students were assumed to borrow to the allowable maximum. (See Table 36.)

Simulation I assumes that the present weighted average tuition remains constant, and therefore declines as a percentage of total costs; that students are permitted to borrow up to the ceiling of actual tuition and room and board costs; that no grant component is provided.

Simulation II differs from I only insofar as tuition is raised from the present weighted average to the estimated full cost of education per student. Again, borrowing up to the level set by full tuition and costs of room and board is permitted with no grants provided.

Simulation III allows for a gradual transition over a 10-year period. In the first year of the fund, students are permitted to borrow the amount required to cover current tuition and room and board. Of the total out-flows from the fund only 60 per cent would be considered loan and therefore repayable and 40 per cent would be considered grant. By the tenth year of the fund's operation, however, students would be permitted to borrow the amount required for full-cost

Table 36

Internal Rate of Return to Fund by Opt-Out Rate (R),
Tax Rate (T) and Simulation Number

Simulation I			
R (%)	T = 7.5%	T = 10.0%	T = 12.5%
8	7.4	7.8	8.0
9	8.2	8.8	9.0
10	8.9	9.6	10.0
11	9.6	10.4	10.9
12	10.2	11.1	11.7
Simulation II			
R (%)	T = 7.5%	T = 10.0%	T = 12.5%
8	5.3	6.2	6.7
9	5.7	6.7	7.4
10	6.1	7.2	8.0
11	6.4	7.6	8.5
12	6.6	8.0	9.0
Simulation III			
R (%)	T = 7.5%	T = 10.0%	T = 12.5%
8	4.5	5.0	5.4
9	5.0	5.7	6.1
10	5.4	6.3	6.8

Source: Cook and Stager, Student Financial Assistance Programs.

tuition and to cover the earnings they forego as a result of being in school. By the tenth year all fund payments would be in the form of loans.

Table 36 shows the internal rates of return obtained from various combinations of opt-out rate and tax rate for each simulation. The ceiling on borrowing is raised progressively from Simulation I to Simulation III resulting in a fall in internal rate of return for any given combination of opt-out rate and tax rate. The rates of return in Simulation III are even lower because they are computed over a period where part of the fund's payments were in the form of non-repayable grants.

Table 37 shows the fund balance and service charge at selected intervals when the opt-out rate is 10 per cent and the repayment rate is 7.5 per cent. The internal rates of return consistent with these parameter values are 8.9 per cent, 6.1 per cent and 5.4 per cent for Simulations I, II and III respectively. Over the 30-year period, then, losses result from Simulations II and III, which must be made up from general revenue.

Simulation I exhibits a high rate of return to the fund, but general revenue would be required to make larger and larger contributions to meet growing real costs of education. Simulations II and III show smaller rates of return to the fund requiring a subsidy to meet the cost of government borrowing, but lower

Table 37

FUND BALANCE AND SERVICE
AT SELECTED INTERVALS FOR SIMULATIONS I, II and III

(\$ million)

Year of Fund Operation	Simulation I		Simulation II		Simulation III	
	Balance Service		Balance Service		Balance Service	
5	- 274.48	21.96	- 522.57	41.81	- 598.94	47.91
10	-1880.34	150.43	- 4042.16	323.37	-2804.62	224.37
15	-3560.34	284.83	- 8986.57	718.93	-8388.50	668.68
20	-4440.71	355.26	-14480.12	1158.41	16092.52	1287.40

Source: Cook and Stager, Student Financial Assistance Programs.

Table 38

FUND BALANCE AND SERVICE AT SELECTED INTERVALS
BY ASSUMED GROWTH RATE OF INCOME FOR SIMULATION II

(\$ million)

Year of Fund Operation	2% Growth Rate		3% Growth Rate		4% Growth Rate	
	Balance	Service	Balance	Service	Balance	Service
5	- 418.1	33.4	- 418.1	33.4	- 418.1	33.4
10	- 3259.7	260.8	- 3247.2	259.8	- 3234.0	258.7
15	- 7410.5	592.8	- 7309.6	584.8	- 7200.9	576.1
20	-12497.5	999.8	-12095.8	967.7	-11654.2	932.3

Source: Cook and Stager, Student Financial Assistance Programs.

demand on general revenue to finance the direct costs of education.

Rates of return and fund balances differ not only as a result of different values of policy parameters but also according to different assumptions about the data. Simulation II was run using growth rates of income of 2 per cent, 3 per cent and 4 per cent with $r = 7.5$ per cent and $R = 8$ per cent. The mean rates of return over the first 15 fully-participating cohorts were 3.4 per cent, 4.4 per cent and 5.3 per cent respectively. The corresponding fund flows appear in Table 38.

In order for the repayment plan to show internal rates of return around 7 per cent under the full cost tuition assumption it appears that tax surcharge rates of 10 per cent would be required. These repayment levels are quite high and are well above the "comfortable" repayment levels suggested by Danieri (7.5 per cent of after-tax income) or Hartman (6 per cent of gross income). It is unlikely that such a plan would attract many borrowers.

3. Future Costs of OSAP

The total value of OSAP grants has risen from about \$5 million in 1966-67 (the first year of the program) to \$22 million in 1968-69. This rapid increase is due not only to the increase in enrollment, but also to the more generous provisions introduced in 1967-68 to

Table 39

Projected Expenditures for Ontario
Student Award Program Grants to 1979/80

	Full-Time Enrolment			of FT Enrol. Receiving Grants ²	Number of Grant Recipients		
	1969/70	1974/75	1979/80		1969/70	1974/75	1979/80
Assuming Teachers Colleges Remain							
Universities	100,100	159,600	213,700	a	37,337	58,340	76,660
Undergraduates	83,800	132,100	172,600	42.5	36,113	56,140	73,360
Graduates	15,300	27,500	41,100	8.0	1,224	2,200	3,300
Teachers Coll- eges	9,093	11,536	12,495	29.0	2,637	3,350	3,630
CAAT	35,650	68,721	97,169	38.8	13,832	26,670	37,700
Others ¹	1,100	1,100	1,100	12.0	132	132	132
Assuming Teachers Colleges Incorp. in Universities (1 year course)							
Universities	100,000	171,136	226,195	a	37,337	63,245	81,965
Undergraduates	84,800	143,636	185,095	24.5	36,113	61,045	78,665
Graduates	15,300	27,500	41,100	8.0	1,224	2,200	3,300
Teachers Colleges	9,093	-	-	29.0	2,637	-	-
(CAAT and others, as above)							

NOTES: 1. Nursing schools are excluded since grants to nursing students have been negligible, i.e. less than 0.5 per cent of total grants.

2. 1968/69 percentage is assumed to remain constant.

a. This percentage was 37.3 for 1968/69 but changes as the relative proportions of undergraduate and graduate enrolment change. When teachers college students are included in universities, the undergraduate recipient rate is used.

Source: Cook and Stager, Student Financial Assistance Programs

raise the per student grant by about 65 per cent.

A number of projections are made, based on the following assumptions:

- a.) that at each type of institution the percentage of students living at home does not change;
- b.) that the percentage of students who are married or who enrol in post-secondary institutions after a year of employment does not change;
- c.) that the sex distribution of students, by institution, does not change;
- d.) that the distribution of students by family income levels and number of dependents does not change;
- e.) that the percentage of students who attend for three or more continuous semesters does not change;
- f.) that there are no significant changes in the opportunities to accumulate savings from summer earnings.

The projections are summarized in Table 40.

Projection A shows the effect of the changing, distribution of enrollment between undergraduate and graduate levels of the universities and among the different types of post-secondary institutions. It is assumed that the teachers' colleges will remain as separate institutions, continuing to offer a one-year

Table 40
PROJECTED EXPENDITURES FOR
ONTARIO STUDENT AWARD PROGRAM GRANTS TO 1979-80

	Average Grant			Total Grants (\$ millions)		
	69-70	74-75	79-80	69-70	74-75	79-80
<u>Projection A¹</u>						
Universities	\$509	\$508	\$508	19.00	29.66	38.96
Undergraduates	510	510	510	18.42	28.63	37.41
Graduates	470	470	470	.58	1.03	1.55
Teachers Colleges	307	307	307	.81	1.03	1.11
CAAT	245	245	245	3.39	6.53	9.24
Others	233	233	233	.03	.03	.03
Totals				<u>23.23</u>	<u>37.25</u>	<u>49.34</u>
<u>Projection B</u>						
Universities	509	508	508	19.00	32.16	41.67
Undergraduates	510	510	510	18.42	31.13	40.12
Graduates	470	470	470	.58	1.03	1.55
Teachers Colleges	307	-	-	.81	-	-
(CAAT and others, as above)				3.42	6.56	9.27
Totals				<u>23.23</u>	<u>38.72</u>	<u>50.94</u>
<u>Projection C</u>						
Universities	509	432	431	19.00	25.24	33.05
Undergraduates	510	431	427	18.42	24.21	31.50
Graduates	470	470	470	.58	1.03	1.55
(T.C., CAAT and others, as in A)				4.23	7.56	10.35
Totals				<u>23.23</u>	<u>32.80</u>	<u>43.40</u>
<u>Projection D</u>						
Universities	509	474	514	19.00	30.00	42.15
Undergraduates	510	476	514	18.42	26.72	37.70
Teachers	-	437	478	-	2.14	2.54
Graduates	470	519	578	.58	1.14	1.91
Teachers Colleges	307	-	-	.81	-	-
CAAT	245	271	298	3.39	7.23	11.23
Others	233	256	282	.03	.03	.04
Totals				<u>23.23</u>	<u>37.26</u>	<u>53.42</u>
<u>Projection E</u>						
Universities	509	521	631	19.00	32.95	51.71
Undergraduates	510	524	631	18.42	29.42	46.29

Table 40 (Cont'd.)
69-70 74-75 79-80 69-70 74-75 79-80

Projection E (Cont'd.)

Teachers	-	463	587	-	2.27	3.12
Graduates	470	572	696	.58	1.26	2.30
Teachers Colleges	307	-	-	.81	-	-
CAAT	245	298	363	3.39	7.95	13.69
Others	233	286	351	.03	.04	.05
Totals				<u>23.23</u>	<u>40.94</u>	<u>65.45</u>

Sources: Average Grants for 1969-70 are estimated data provided by the Department of University Affairs. These averages are assumed constant to 1979-80. The average for universities changes with changing graduate and undergraduate proportions of total enrolment.

See Cook and Stager, Student Financial Assistance Program.

Notes: 1. See text for description of Projections.

program. Nursing schools are omitted from the tables.

The average grants for each institution are held constant at the 1968-69 levels, although the average grant for universities is allowed to vary with the changing ratio of undergraduates to graduate students. The percentage of students enrolled who receive grants at each institution is assumed to remain constant at the 1968-69 level.

Projection B is similar to Projection A except that teachers' colleges are assumed to be incorporated in the universities by 1974-75. It is also assumed that the enrollment for teacher training would not be affected by this institutional change and that the enrollment projections for teachers' colleges can be added to the universities' enrollment. The "teachers college" students are treated in the same way as undergraduates when they are included in the universities.

Projection C assumes all conditions described in Projection A. In addition the distribution of the total under-graduate enrollment by faculty is assumed to change over time.

The effect of taking account of faculty distribution of enrollment is that the projected 1979-80 costs of the OSAP grants are reduced by about 15 per cent. If costs were not held constant then this difference would be greater.

In Projection D teachers' colleges are incorporated into the universities and the distribution of undergraduate enrollment altered as in Projection C. The total enrollment projections by type of institution remain as in Projection B. Rather than holding costs constant, the real costs of education and real family incomes were increased with net effect of increasing OSAP grants at a rate of 2 per cent per year. The effect of increasing family incomes is to require families to make a progressively larger contribution and thus reduce the OSAP contribution. This effect will probably be offset in part by rising real costs of students' expenditures.

For Projection E the same conditions described for Projection D prevail except that real costs are increased such that the real value of the OSAP grant increases by 4 per cent per year.

4. Distribution and Cost of Grants in Ontario

The amount of grant a student receives depends almost entirely on the financial background and size of his family. It varies according to his income level and number of dependents and usually, some portion of the costs of a student's education is assumed to be funded by the student and his family. The impact of variation in contribution based on a portion of discretionary income (defined as total income reduced by taxes, the

amount of income provided for base living costs of parents, and the income required for each additional dependent) is described in terms of the distribution of grants by income class and dependents, and the expected costs of such a program over the years 1968-69 to 1978-79.

The present maximum grant for university students under OSAP is approximately \$600. Table 41 shows the per student grant by maximum size of grant, and expected contribution of student (a) as a proportion of discretionary income and number of dependents, when \$20.5 million ($a = .2$) and \$13.8 million ($a = .5$) are distributed among university students according to our criteria. The \$20.5 million approximates the grant component of the 1968-69 OSAP awards to university students. The maximum grant for students presently enrolled in the Colleges of applied arts and technology is about \$490. Table 42 shows the distribution of grants to students at the CAATs by size of maximum grant, expected contribution of student (a) and number of dependents, when \$7.4 million ($a = .2$) and \$5.7 million ($a = .5$) are distributed among students at CAATs. The \$7.4 million approximates the grant presently provided through OSAP.

Table 41
Distribution of Grants to University Students by Income Class, Number of Dependents,
Expected Contribution of Student (a) and Size of Maximum Grant: 1969-70
(millions of dollars)

INCOME CLASS	MAXIMUM GRANT	NUMBER OF DEPENDENTS													
		<u>1</u>		<u>2</u>		<u>3</u>		<u>4</u>		<u>5</u>		<u>6</u>		<u>7</u>	
		a=.2	a=.5	a=.2	a=.5	a=.2	a=.5	a=.2	a=.5	a=.2	a=.5	a=.2	a=.5	a=.2	a=.5
0 - \$ 4,000	\$ 600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
4,000 -	600	430	160	530	430	600	600	600	600	600	600	600	600	600	600
	1100	930	660	1030	930	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
5,000 -	600	250	0	360	0	460	260	570	530	600	600	600	600	600	600
	1100	750	330	860	500	960	760	1070	1030	1100	1100	1100	1100	1100	1100
6,000 -	600	100	0	200	0	300	0	400	110	500	380	600	600	600	600
	1100	600	0	700	90	800	340	900	610	1010	880	1100	1100	1100	1100
7,000 -	600	0	0	40	0	150	0	250	0	360	0	460	260	570	520
	1100	430	0	540	0	650	0	750	230	860	490	960	760	1070	1020
8,000 -	60	0	0	0	0	0	0	110	0	220	0	3200	0	420	220
	1100	270	0	400	0	500	0	610	0	720	140	820	410	920	720
9,000 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1100	100	0	200	0	300	0	400	0	500	0	600	0	700	0
10,000 +	1100	0	0	0	0	40	0	140	0	240	0	340	0	440	0

Note: Where a=.2, total grants distributed equal \$29.4 million; where a=.5, total grants equal \$20.7 million

Source: Cook and Stager, Student Financial Assistance Programs

Tables 42 and 43 show the estimated government outlay required to support various grant programs over the next ten years. The distribution of students by income class was obtained from survey results from a sample of the Canadian post-secondary student population and the same distribution assumed for the next ten years. The distribution of students by number of dependents in the family was assumed to be that of the 1968-69 OSAP award recipients. Insofar as the grant program itself results in a more than proportionate increase in the lower income groups, these figures will underestimate the budget required to provide the indicated level of benefits. Table 43 shows that the grant component required to provide the present level of benefits will increase by about 133 per cent over ten years. An immediate doubling of the present level of benefits to low-income students would result in an instantaneous increase in total grants of about 133 per cent.

Table 42

PRESENT COST OF PROGRAM PROVIDING \$600 MAXIMUM UNIVERSITY GRANT
AND \$490 CAAT GRANT BY INSTITUTION, EXPECTED CONTRIBUTION OF
STUDENT (a) AND YEAR (MILLIONS OF DOLLARS)

<u>Year</u>	<u>University</u>		<u>CAAT</u>		<u>Total University, CAAT Teachers, Nurses</u>	
	a = .2	a = .5	a = .2	a = .5	a = .2	a = .5
1969-70	20.5	13.8	7.4	5.7	29.4	20.7
70-71	23.5	15.8	9.1	7.0	34.3	24.2
71-72	26.4	17.7	10.6	8.2	38.8	27.5
72-73	29.5	19.9	12.3	9.5	44.0	31.1
73-74	32.7	22.0	14.2	11.0	49.3	34.9
74-75	36.5	24.5	16.5	12.7	55.6	39.1
75-76	39.4	26.5	18.1	13.9	60.4	42.5
76-77	42.3	28.9	19.9	15.3	65.9	46.4
77-78	46.2	31.1	22.0	16.9	71.6	50.5
78-79	49.9	33.6	24.5	18.8	78.1	55.1

Source: Cook and Stager, Student Financial Assistance Programs

Table 43

COST OF PROGRAM PROVIDING A \$1100 MAXIMUM UNIVERSITY GRANT AND
\$900 CAAT GRANT BY INSTITUTION: EXPECTED CONTRIBUTION OF
STUDENT (a) AND YEAR (MILLIONS OF DOLLARS)

<u>Year</u>	<u>University</u>		<u>CAAT</u>		<u>Total University, CAAT Teachers, Nurses</u>	
	a = .2	a = .5	a = .2	a = .5	a = .2	a = .5
1969-70	51.0	32.8	16.2	10.8	71.2	45.8
70-71	58.3	37.5	19.9	13.3	82.7	53.3
71-72	65.5	42.1	23.2	15.4	93.8	60.4
72-73	73.4	47.2	26.9	17.8	106.0	68.2
73-74	81.3	52.3	31.1	20.6	118.7	76.4
74-75	90.5	58.3	36.2	23.9	133.0	85.6
75-76	98.0	63.1	39.6	26.1	144.4	93.9
76-77	106.7	68.6	43.4	28.6	157.4	101.3
77-78	114.9	73.9	48.1	31.7	170.9	110.0
78-79	124.2	80.0	53.5	35.3	186.5	120.1

Source: Cook and Stager, Student Financial Assistance Programs

Table 44

DISTRIBUTION OF GRANTS TO C.A.A.T. STUDENTS BY FAMILY INCOME CLASS,
NUMBER OF DEPENDENTS, EXPECTED CONTRIBUTION OF STUDENTS (a) AND SIZE OF MAXIMUM GRANT: 1969-70
(millions of dollars)

INCOME CLASS	MAXIMUM GRANT		NUMBER OF DEPENDENTS						
	1	2	3	4	5	6	7		
	a=.2	a=.5	a=.2	a=.5	a=.2	a=.5	a=.2	a=.5	a=.2
	a=.5	a=.2	a=.5	a=.2	a=.5	a=.2	a=.5	a=.2	a=.5
Less than \$4000	490 490	490 490	490 490	490 490	490 490	490 490	490 490	490 490	490 490
	900 900	900 900	900 900	900 900	900 900	900 900	900 900	900 900	900 900
\$4,000 - \$5,000	490 320	50 420	320 490	490 490	490 490	490 490	490 490	490 490	490 490
	900 730	460 830	730 900	900 900	900 900	900 900	900 900	900 900	900 900
\$5,000 - \$6,000	490 140	0 250	350 150	460 420	490 490	490 490	490 490	490 490	490 490
	900 550	130 660	300 760	560 870	830 900	900 900	900 900	900 900	900 900
\$6,000 - \$7,000	490 0	0 90	0 190	0 290	0 390	270 490	490 490	490 490	490 490
	900 400	0 500	0 600	140 700	410 810	680 900	900 900	900 900	900 900
\$7,000 - \$8,000	490 0	0 0	0 40	0 140	0 250	0 350	150 760	560 620	210
	900 230	0 340	0 450	0 550	30 660	290 760	560 620	210	
\$8,000 - \$9,000	490 0	0 0	0 0	0 0	0 110	0 210	0 310	110	
	900 70	0 200	0 300	410 0	520 520	0 620	210 720	520	

Note: Where a=.2 total grants distributed equal \$71.2 million; where a=.5 total grants equal \$45.8 million.

Source: Cook and Stager, Student Financial Assistance Programs.

CHAPTER VI

Summary and Conclusions

The present system of financing post-secondary education in Ontario has evolved over a very short time frame (stemming from around 1920) and is more a product of historical chance than of rational comprehensive schemes containing a single set of objectives. The price of obtaining this system has been the demise of private higher institutions and an almost complete reliance on federal-provincial subsidies. Such a system, of necessity, is responsive to the bodies which lend it financial support rather than the consumers of the process (i.e. the students). Under such a system the particular problems of the student, such as individual financing, have not been given great consideration. It is unlikely that the pattern of financing, i.e. contributions by federal and provincial governments and private individuals, will change. The present system works quite well and it is unlikely that any of the participants will withdraw.

The escalating costs of post-secondary education, especially in the decade of the 1960s, have led to an increasing demand and need for public subsidy. Initially, public contributions were made automatically as education was viewed as a right - a view conditioned in part by the free primary and secondary school systems in education. As the levels of expenditures rose, taxpayers began to question the uses to which their money was put and the returns or benefits received from the

process. Increasingly the traditional investment argument for education became discounted. The emergence of large numbers of graduates has reduced the demand for a once-scarce commodity (as witnessed by the increasing job shortage among graduates). This has reinforced the concept that education is a consumption good, providing monetary and psychic benefits primarily to the student, with reduced external societal benefits. Empirical studies indicating high private rates of return to post-secondary education with much lower returns to society have triggered a re-evaluation of the costs which should be borne by students. In the coming decade the student will be asked to bear an increasing share of the costs of education, a share more commensurate with the evaluation of monetary and psychic benefits derived from the process.

The social objectives of any scheme for financing post-secondary education are expressed as:

a.) To reduce inequality of opportunity to post-secondary education. Equality of opportunity has been defined in a number of contexts, but essentially it means that the opportunity of a student from a lower socio-economic background to further his education should be the same as that of one from a higher socio-economic background. One of the major barriers to equality of opportunity has been the lack of financial resources and it is this obstacle which society is attempting to eliminate.

b.) To transfer the cost burden to those who are able to pay. It is recognized that most of the subsidies to higher education (i.e. operating grants, capital grants) are distributed among the student body without discrimination of ability to pay. Clearly, money could be distributed more efficiently if the funds were allocated differentially on the basis of need. This could be achieved through the application of variable tuition rates.

c.) To encourage entrance into programs of study which rate high on the social priority list. If public subsidies were not provided in socially desirable programs such as theology, medicine, and music, and if resource allocation decisions were made on purely economic grounds, the quality of life could be seriously impaired. There is, then, a need to endure the existence of certain kinds of education even though they are economically unprofitable.

d.) To encourage academic excellence. Recognition must be given to the fact that academic excellence should be encouraged, and that this encouragement requires financial outlays beyond the ordinary expenditures. These expenditures should be made independent of socio-economic class as society will probably benefit to a much greater degree.

The extremist viewpoints on education are represented by the advocates of free tuition on the one hand and full cost tuition on the other (with a wide choice of alternatives and the present system lying somewhere in between). The cost

of educating a student is very high. Full cost tuition would practically eliminate students from low socio-economic backgrounds and heavily skew the demand for education towards the upper classes. Free tuition would probably increase demand beyond the levels which taxpayers would tolerate or could afford. It would also reduce the tendency to discriminate between institutions and between programs.

The answer to the fundamental questions about any financing scheme depend on the answers to

- a.) what are the costs?
- b.) what can the student afford to pay?
- c.) what can the taxpayer afford to pay?
- d.) what are they willing to pay?

The final resolution of the degree of student subsidy is basically a political decision. The resolution hinges on a definition of what is a tolerable level of educational payment (or repayment) for the student. The taxpayer is presently funding about 86 per cent of the present direct costs of post-secondary education while the student bears only 12 per cent (with the remainder obtained from private sources). It seems unlikely that any reasonable criterion of tolerability would increase the taxpayers' share of the costs. More probably, the student is able to pay a much greater proportion of the costs especially in the high return programs such as dentistry and medicine.

The decision on the proportion of cost sharing between the student and the government depends on a number of criteria, some of which are listed below:

a.) Initial Outlay required - the maximum outlay would be demanded from free or zero-cost tuition as this is equivalent to a total grant scheme. The opposite extreme would be defined by private unsubsidized loans obtained at commercial banks.

b.) Tolerability of Payment criteria based on

i) the students' ability to pay, ii) the taxpayers' ability to pay, iii) an acceptable level of repayment as a proportion of income.

c.) Redistributive Impact - the socio-economic "targetting" impact of various loan or grant schemes affects the distribution of participants in post-secondary education. It is important that these programs are directed towards and attract large segments of the student population or their impact is minimized.

d.) Subsidization - the degree of subsidization is measured by the degree to which the program is not self-supporting through such mechanisms as deferred payments, reduced (i.e. below market) interest rates, forgiveness features, etc.

Financing Schemes are defined through:

a.) Grants administered through the student or through the institution or both. If the grants are administered through the institution then the institution retains a large degree of autonomy and needs to be less responsive to student demands. A secondary impact of administering through the institution is that "targetting" of funds to specific socio-economic groups is much more difficult. Conversely, if responsiveness to student demands and redistribution of income is required then the funds should be channelled through the students.

b.) Loans - loan plans may be either subsidized or unsubsidized. Of the unsubsidized schemes there are only private commercial loans taken out by students. The subsidized loans are divided into two categories, i) income related loan plans, and ii) guaranteed loan programs (with or without subsidized interest rates).

The orientation of tuition towards full cost implies a much heavier reliance on student loan schemes in the future.

The advantages of income related loan schemes are that

a.) No borrower need restrict his investment in education because of concern about a large debt which he could not repay. This should encourage students to borrow and income barriers to attendance at a college would be drastically reduced.

b.) By extending repayment periods to 30 or 40 years instead of the present typical 10 years, the students may borrow much larger sums for their education.

c.) The availability of the loans is not directly affected by the state of the money market.

d.) The plan makes young people more responsible for their own education as they have borrowed against their future incomes and have not relied on the largess of parents or society.

e.) Large government programs are most easily administered when there is no need for discrimination among recipients.

There are also a number of disadvantages to these plans and they can be summarized in the following comments:

a.) Students with high income prospects, or with parents of high income, tend not to use the plan, since they can tap other sources, including the banks, for funds. Thus the children of low income earners will be most dependent on this plan, and it may not become self-sufficient.

b.) Social and political pressure could be brought to bear upon students, by refusing them lending privileges.

c.) Large increase in fees could occur.

d.) Women would carry a negative dowry into marriage.

A number of suggestions can be made about the desirable characteristics of student financing programs:

- a.) The repayment period for loans should be extended from the present standard repayment term of 10 years to 30 and 40 year terms.
- b.) A student loan bank should be set up to ensure that students have access to loans even when private capital markets cannot, or will not, provide funds.
- c.) Repayment rates for loans should be flexible and related to the student's income level and time horizon.
- d.) Opt-out or lump sum repayment features should be provided in the terms of the loan repayment agreement both to attract high-income earners and to allow the potential of quick debt cancellation.
- e.) A number of risk mutualization features should be provided to make repayment of loans "comfortable" and reduce any unexpected hardships encountered in repaying:
 - i) payments should be reduced or suspended during periods of reduced earnings or unemployment, and ii) loans should be forgiven for families consistently earning incomes below some officially recognized minimum level after a period of, say, five years.
- f.) Subsidies should be provided in the form of grants. The size of these grants should depend on the student's ability to pay so that low-income earners or students from "poor" families will be attracted to post-secondary education.

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